

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 S 5
 Edition : 10.08.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 833
 Injection pump
 Pump designation : PE6P110A320LS3835
 EP type number : 0 411 816 749
 Governor
 Governor design. : RQ300/900PA827-2K
 Govenner no. : 0 421 803 094

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : 0M441

1st version kW : 150.0
 Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing⁰CS: 0-45-120-165-240-285
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 900

Contr.-rod trav.mm: 13.60...13.70

Del.quantity cm3/ : 13.3...13.5

100H.: (13.0...13.7)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.8...9.0

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.40...1.60

2nd speed 1/min: 500

Sleeve travel mm: 5.50...5.70

3rd speed 1/min: 775

Sleeve travel mm: 6.50...6.80

4th speed 1/min: 880

Sleeve travel mm: 7.20...7.50

5th speed 1/min: 960

Sleeve travel mm: 9.50...10.10

SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Cont.-rod travelmm: 14.70...15.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 900

Del.quantity cm3/ : 133.0...135.0

1000H.: (130.5...137.5)

Dispersion cm³/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 36...44

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 15.2

Testing:
1st c-rod trav.mm : 12.70
Speed 1/min : 945...960
2nd c-rod trav.mm : 4.00
Speed 1/min : 990...1020
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 9...17
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 8.8

Testing:
Speed 1/min : 100
C-rod trav.mm min : 10.50
Speed 1/min : 300
C-rod trav.mm : 8.80...8.90
C-rod trav.mm : 2.00
Speed 1/min : 450...490
Speed 1/min : 550
C-rod trav.mm max : 1.80

TORQUE CONTROL

Dimension a mm : 2.00
Torque-control curve - 1st version
1st speed 1/min : 900
C-rod trav.mm : 13.60...13.70
2nd speed 1/min : 600
C-rod trav.mm : 13.20...13.40
3rd speed 1/min : 750
C-rod trav.mm : 13.30...13.50

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm³/ : 123.0...126.0
1000H.: (120.0...129.0)
Dispersion cm³/ : 6.00
1000H.: (9.00)
Speed 1/min : 750
Del.quantity cm³/ : 127.0...131.0
1000H.: (124.0...134.0)
Dispersion cm³/ : 6.00
1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

AO3

1st version
1mm control-rod travel less than

full-load trav.mm: 12.70
Speed 1/min : 945...960

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 120.0...140.0
1000H.: (116.0...144.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 S 6
Edition : 14.08.87
Superceeded : 6.10.86
Calibrating oil : ISO-4113

Combination no. : 0 401 846 834

Injection pump
Pump designation : PE6P110A32OLS3835
EP type number : 0 411 816 749
Governor
Governor design. : RQ300/1050PA827-4K
Governor no. : 0 421 803 096

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 160.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness : 6.00x1.50x600
x Length mm

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing^oCS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 13.30...13.40

Del.quantity cm³/ : 13.9...14.1

100H.: (13.6...14.3)

Dispersion cm³/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.8...9.0

Del.quantity cm³/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm³/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 1.30...1.50

2nd speed 1/min: 500
Sleeve travel mm: 5.50...5.70

3rd speed 1/min: 900
Sleeve travel mm: 6.90...7.20

4th speed 1/min: 1050
Sleeve travel mm: 7.60...7.90

5th speed 1/min: 1100
Sleeve travel mm: 10.10...10.60

SLEEVE POSITION

Control-lever position
Degree: -2

Speed 1/min: 600
Contr.-rod travelmm: 14.70...15.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1050
Del.quantity cm³/ : 139.0...141.0
1000H.: (136.5...143.5)

Dispersion cm³/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 32...40

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 15.2

Testing:

1st c-rod trav.mm : 12.30

Speed 1/min : 1095...1110

2nd c-rod trav.mm : 4.00

Speed 1/min : 1150...1180

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 8...16

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 8.8

Testing:

Speed 1/min : 200

C-rod trav.mm min : 10.50

Speed 1/min : 300

C-rod trav.mm : 8.80...8.90

C-rod trav.mm : 2.00

Speed 1/min : 450...490

Speed 1/min : 550

C-rod trav.mm max : 1.80

TORQUE CONTROL

Dimension a mm : 2.00
Torque-control curve - 1st version

1st speed 1/min : 1050

C-rod trav.mm : 13.30...13.40

2nd speed 1/min : 600

C-rod trav.mm : 13.20...13.40

3rd speed 1/min : 900

C-rod trav.mm : 13.40...13.60

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm³/ : 124.0...127.0
1000H.: (121.0...130.0)

Dispersion cm³/ : 6.00
1000H.: (9.00)

Speed 1/min : 900
Del.quantity cm³/ : 130.0...134.0
1000H.: (127.0...137.0)

Dispersion cm³/ : 6.00
1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 12.30
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 D2
Edition : 18.09.87
Superceeded : 22.5.87
Calibrating oil : ISO-4113

Combination no. : 0 401 846 835

Injection pump
Pump designation : PE6P120A32ORS3183-1
EP type number : 0 411 826 758
Governor
Governor design. : RQ250/1000PA832
Governor no. : 0 421 801 368

Customer-spec. information
Customer : DAF

Engine : WS 259

1st version kW : 259,0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 12.60...12.70

Del.quantity cm³/ : 20.0...20.2

100H.: (19.7...20.5)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250

Contr.-rod trav. m: 7.2...7.4

Del.quantity cm³/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm³/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 550

Contr.-rod travelmm: 15.60...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 1000

Del.quantity cm³/ : 200.0...202.0

1000H.: (197.0...205.0)

Dispersion cm³/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 550

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 11.60

Speed 1/min : 1035...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1125...1155

4th speed 1/min : 1250

C-rod trav.mm : 0.00...1.00

A08

LOWEST RATED SPEED I
Setting point w/out aux. spring
Speed 1/min : 250
Contr.-rod trav.mm: 7.3

Testing:
Speed 1/min : 100
C-rod trav.mm min : 8.80
Speed 1/min : 250
C-rod trav.mm : 7.20...7.40
C-rod trav.mm : 2.00
Speed 1/min : 350...390

TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 850
C-rod trav.mm : 12.60...12.70
2nd speed 1/min : 1000
C-rod trav.mm : 12.50...12.70

compensator (LDA,ADA,ALDA)

1st version
Setting
Speed 1/min : 600
Pressure hPa : 1000
Contr.-rod trav.mm: 12.60...12.70

Measurement
Speed 1/min : 600
1st pressure hPa : -
C-rod trav.mm : 10.60...10.80
2nd pressure hPa : 430
C-rod trav.mm : 12.10...12.20
3rd pressure hPa : 280
C-rod trav.mm : 11.00...11.20

FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
Speed 1/min : 600
Del.quantity cm³/ : 144.0...146.0
1000H.: (141.0...149.0)

ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
full-load trav.mm: 11.60
Speed 1/min : 1035...1050

STARTING FUEL DELIVERY
Speed 1/min : 100
Del.quantity cm³/ : 260.0...300.0
1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 7.20...7.40
Del.quantity cm3/ : 16.0...22.0
1000H.: (13.0...25.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10,0 S1
Edition : 18.09.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 846 836

Injection pump
Pump designation : PE6P120A320RS3186
EP type number : 0 411 826 756
Governor
Governor design. : RQV250..1100PA657-1
Governor no. : 0 421 813 414

Customer-spec. information
Customer : VOLVO

Engine : TD102FDQ

1st version kW : 232.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.60...2.70
 : (2.55...2.75)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11.40...11.50

Del.quantity cm3/ : 19.7...19.9

100H.: (19.4...20.2)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250

Contr.-rod trav. m: 3.9...4.1

Del.quantity cm3/ : 1.7...2.2
100H.: (1.4...2.4)

Dispersion cm3/ : 0.5
100H.: (0.7)

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.00...1.40

2nd speed 1/min: 350

Sleeve travel mm: 2.20...2.80

3rd speed 1/min: 700

Sleeve travel mm: 6.40...6.60

4th speed 1/min: 1135

Sleeve travel mm: 7.70...7.90

5th speed 1/min: 1210

Sleeve travel mm: 8.90...9.30

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1170

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 1000

Del.quantity cm3/ : 197.0...199.0
1000H.: (194.0...202.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 56...64

Testing:

1st c-rod trav.mm : 10.40

Speed 1/min : 1130...1140

2nd c-rod trav.mm : 4.00

Speed 1/min : 1185...1215

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 4...12

Testing:

Speed 1/min : 100

C-rod trav.mm min : 5.40

Speed 1/min : 250

C-rod trav.mm : 3.90...4.10

CONSTANT REGULATION

Speed 1/min : 250...360

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 1000
Contr.-rod trav.mm: 11.40...11.50

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 8.60...8.80

2nd pressure hPa : 80

C-rod trav.mm : 8.90...9.00

3rd pressure hPa : 460

C-rod trav.mm : 11.00...11.20

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 700

Del.quantity cm3/ : 143.0...145.0

1000H.: (140.0...148.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.40
Speed 1/min : 1130...1140

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 3.90...4.10
Del.quantity cm3/ : 17.0...22.0
1000H.: (14.5...24.5)
Dispersion cm3/ : 5.00
1000H.: (7.00)

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10,0 T
Edition : 21.08.87
Superceeded : 9.3.87
Calibrating oil : ISO-4113
Combination no. : 0 401 846 838
Injection pump
Pump designation : PE6P110A32ORS3152
EP type number : 0 411 816 746
Governor
Governor design. : RQV250...1100PA589
Governor no. : 0 421 813 307

Customer-spec. information
Customer : VOLVO-BM

Engine : TD102

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar : 25...27
Prestroke mm : 3.50...3.60
 : (3.45...3.65)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.00...13.10

Del.quantity cm3/ : 17.5...17.7

100H.: (17.2...18.0)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 3.9...4.1
Del.quantity cm3/ : 1.5...1.9
Dispersion cm3/ : 0.4
100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250
Sleeve travel mm: 1.20...1.30
2nd speed 1/min: 350
Sleeve travel mm: 2.20...2.70
3rd speed 1/min: 450
Sleeve travel mm: 3.70...4.10
4th speed 1/min: 750
Sleeve travel mm: 6.40...6.60
5th speed 1/min: 1160
Sleeve travel mm: 8.10...8.30

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1180
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Charge press. hPa : 1000
Del.quantity cm3/ : 175.0...177.0
1000H.: (172.0...180.0)
Dispersion cm3/ : 4.00
1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 59...67

Testing:
1st c-rod trav.mm : 12.00
Speed 1/min : 1160...1170
2nd c-rod trav.mm : 4.00
Speed 1/min : 1220...1250
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 4...12

Testing:
Speed 1/min : 100
C-rod trav.mm : 5.40
Speed 1/min : 250
C-rod trav.mm : 3.90...4.10

CONSTANT REGULATION

Speed 1/min : 250...360

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 1000
Contr.-rod trav.mm: 13.00...13.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 11.50...11.60
2nd pressure hPa : 480
C-rod trav.mm : 12.80...12.90
3rd pressure hPa : 340
C-rod trav.mm : 11.80...12.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700
Del.quantity cm3/ : 152.0...154.0
1000H.: (149.0...157.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12.00
Speed 1/min : 1160...1170

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 160.0...190.0
1000H.: (156.0...194.0)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 3.90...4.10
Del.quantity cm3/ : 15.0...19.0
Dispersion cm3/ : 4.50
1000H.: (7.50)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

APPLICATION

Dumper

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 E1
 Edition : 18.09.87
 Superceeded : 15.5.87
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 839
 Injection pump
 Pump designation : PE6P120AS2ORS3183-1Y
 EP type number : 0 411 826 765
 Governor
 Governor design. : RQV250...1000PA851
 Governor no. : 0 421 813 604

Customer-spec. information
 Customer : DAF

Engine : WS 282

1st version kW : 282.0
 Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 21.9...22.1

100H.: (21.6...22.4)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.8...7.0

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.30...1.70

2nd speed 1/min: 400

Sleeve travel mm: 3.20...3.60

3rd speed 1/min: 800

Sleeve travel mm: 5.80...6.20

4th speed 1/min: 1000

Sleeve travel mm: 7.90...8.10

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1040

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 1000

Del.quantity cm3/ : 219.0...221.0

1000H.: (216.0...224.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 51...59

Testing:

1st c-rod trav.mm : 12.10
Speed 1/min : 1040...1050
2nd c-rod trav.mm : 4.00
Speed 1/min : 1130...1160
4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 15...23

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.50
Speed 1/min : 250
C-rod trav.mm : 6.80...7.00

CONSTANT REGULATION

Speed 1/min : 275...385

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 1000
Contr.-rod trav.mm: 13.10...13.20

Measurement

Speed 1/min : 600
1st pressure hPa : -
C-rod trav.mm : 10.20...10.40
2nd pressure hPa : 570
C-rod trav.mm : 12.40...12.50
3rd pressure hPa : 310
C-rod trav.mm : 10.60...10.90

SWITCH-OVER POINT

Speed 1/min : 200 (220)

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 600
Del.quantity cm3/ : 144.0...146.0
1000H.: (141.0...149.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12.10
Speed 1/min : 1040...1050

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 260.0...300.0
1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.80...7.00
Del.quantity cm3/ : 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA 13,8 I2
Edition : 27.03.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 846 843
Injection pump
Pump designation : PE6P120A72ORS3069
EP type number : 0 411 826 712
Governor
Governor design. : RQV300...1000PA501-4
Governor no. : 0 421 813 609

Customer-spec. information
Customer : IVECO-FIAT

Engine : 8210.22.373

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + -^o : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 12.50...12.60

Del.quantity cm³/ : 20.5...20.7

100H.: (20.2...21.0)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.0...6.2

Del.quantity cm³/ : 1.7...2.3

100H.: (1.4...2.6)

Dispersion cm³/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 325

Sleeve travel mm: 1.50...1.90

2nd speed 1/min: 450

Sleeve travel mm: 2.90...3.30

3rd speed 1/min: 800

Sleeve travel mm: 5.70...6.10

4th speed 1/min: 1000

Sleeve travel mm: 8.00...8.20

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1035

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Charge press. hPa : 700

Del.quantity cm³/ : 205.0...207.0

1000H.: (202.0...210.0)

Dispersion cm³/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 57...65

Testing:

1st c-rod trav.mm : 11.50

Speed 1/min : 1040...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1130...1160

4th speed 1/min : 1250

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 8...16

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.60

Speed 1/min : 300

C-rod trav.mm : 6.00...6.20

CONSTANT REGULATION

Speed 1/min : 320...420

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 12.50...12.60

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 9.80...9.90

2nd pressure hPa : 280

C-rod trav.mm : 11.80...11.90

3rd pressure hPa : 220

C-rod trav.mm : 10.70...11.00

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 500

Del.quantity cm³/ : 214.0...220.0

1000H.: (211.0...223.0)

Charge press. hPa : -

Speed 1/min : 500

Del.quantity cm³/ : 131.0...133.0

1000H.: (128.0...136.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.50
Speed 1/min : 1040...1050

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 175.0...195.0
1000H.: (171.0...199.0)

Remarks:

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA 13,8 H1
 Edition : 13.05.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 844
 Injection pump
 Pump designation : PE6P120A72ORS3069
 EP type number : 0 411 826 712
 Governor
 Governor design. : RQ300/1000PA502-1
 Governer no. : 0 421 801 388

Customer-spec. information
 Customer : IVECO-FIAT

Engine : 8210.22.371

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)

Contr.-rod trav.mm: 9.00...12.00

A20

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
 Tolerance + -⁰ : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 12.50...12.60

Del.quantity cm3/ : 20.5...20.7

100H.: (20.2...21.0)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.0...6.2

Del.quantity cm3/ : 1.7...2.3

100H.: (1.4...2.6)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: 45

Speed 1/min: 600

Cont.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Charge press. hPa : 700

Del.quantity cm3/ : 205.0...207.0

1000H.: (202.0...210.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 11.40

Speed 1/min : 1045...1060

2nd c-rod trav.mm : 4.00

Speed 1/min : 1135...1165

4th speed 1/min : 1250

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.1

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.60
Speed 1/min : 300
C-rod trav.mm : 6.00...6.20
C-rod trav.mm : 2.00
Speed 1/min : 360...400

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1000
C-rod trav.mm : 13.00...13.10
2nd speed 1/min : 600
C-rod trav.mm : 13.00...13.20

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 700
Contr.-rod trav.mm: 12.50...12.60

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 9.80...9.90
2nd pressure hPa : 280
C-rod trav.mm : 11.80...11.90
3rd pressure hPa : 220
C-rod trav.mm : 10.70...11.00

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 500
Del.quantity cm3/ : 214.0...220.0
1000H.: (211.0...223.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 131.0...133.0
1000H.: (128.0...136.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than
full-load trav.mm: 11.40
Speed 1/min : 1045...1060

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 175.0...195.0
1000H.: (171.0...199.0)

Remarks:

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 12,OK10
Edition : 26.06.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 846 852
Injection pump
Pump designation : PE6P120A32ORS3118
EP type number : 0 411 826 726
Governor
Governor design. : RQV250...1025PA657-18
Governor no. : 0 421 813 648

Customer-spec. information
Customer : VOLVO

Engine : TD122FAQ
1st version kW : 287.0
Speed 1/min: 2050

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42
Overflow valve : 1 417 413 025
Inlet press., bar : 1.50
Calibrating nozzle-holder assembly : 1 688 901 019
Opening pressure, bar : 207...210
Perforated-plate diameter mm : 0,8
Test inj. tubing : 1 680 750 067
Outside diameter x Wall thickness x Length mm : 6,00x1,50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant. per values -----

START OF DELIVERY
Test pressure, bar: 25...27

A22

Prestroke mm : 2.60...2.70
 : (2.55...2.75)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.20...13.30

Del.quantity cm3/ : 23.4...23.6

100H.: (23.1...23.9)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 3.3...3.5
Del.quantity cm3/ : 1.8...2.3
100H.: (1.5...2.5)
Dispersion cm3/ : 0.5
100H.: (0.7)

(B) Setting of injection pump with externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250
Sleeve travel mm: 1.00...1.40
2nd speed 1/min: 350
Sleeve travel mm: 2.20...2.80
3rd speed 1/min: 700
Sleeve travel mm: 6.40...6.60
4th speed 1/min: 1085
Sleeve travel mm: 8.40...8.60
5th speed 1/min: 1160
Sleeve travel mm: 9.60...10.00

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1085
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Charge press. hPa : 900

Del. quantity cm³/ : 234.5...236.5
1000H.: (231.5...239.5)
Dispersion cm³/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 116...124

Testing:

1st c-rod trav.mm : 12.20
Speed 1/min : 1080...1090
2nd c-rod trav.mm : 4.00
Speed 1/min : 1145...1175
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 59...67

Testing:

Speed 1/min : 100
C-rod trav.mm min : 4.80
Speed 1/min : 250
C-rod trav.mm : 3.30...3.50

CONSTANT REGULATION

Speed 1/min : 250...350

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13.20...13.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.20...9.40
2nd pressure hPa : 80
C-rod trav.mm : 9.60...9.70

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 700
Del. quantity cm³/ : 154.0...156.0
1000H.: (151.0...159.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 12.20

Speed 1/min : 1080...1090

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 240.0...280.0
1000H.: (236.0...284.0)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 3.30...3.50
Del. quantity cm³/ : 18.0...23.0
1000H.: (15.5...25.5)
Dispersion cm³/ : 5.00
1000H.: (7.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 12,OK11
Edition : 26.06.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 846 853
Injection pump
Pump designation : PE6P120A32ORS3118
EP type number : 0 411 826 726
Governor
Governor design. : RQV250...90DPA657-19
Governor no. : 0 421 813 649

Customer-spec. information
Customer : VOLVO

Engine : TD122FBQ

1st version kW : 287.0
Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses:
Set constant delivery quantity
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.60...2.70
 : (2.55...2.75)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.20...13.30

Del.c quantity cm³/ : 23.4...23.6

100H.: (23.1...23.9)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 3.3...3.5

Del.quantity cm³/ : 1.8...2.3

100H.: (1.5...2.5)

Dispersion cm³/ : 0.5

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.00...1.40

2nd speed 1/min: 350

Sleeve travel mm: 2.20...2.80

3rd speed 1/min: 700

Sleeve travel mm: 6.40...6.60

4th speed 1/min: 935

Sleeve travel mm: 7.60...7.80

5th speed 1/min: 1015

Sleeve travel mm: 8.90...9.30

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 980

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del. quantity cm³/ : 234.5...236.5
1000H.: (231.5...239.5)
Dispersion cm³/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 113...121

Testing:

1st c-rod trav.mm : 12.20
Speed 1/min : 930...940
2nd c-rod trav.mm : 4.00
Speed 1/min : 1000...1030
4th speed 1/min : 1150
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 59...67

Testing:

Speed 1/min : 100
C-rod trav.mm min : 4.80
Speed 1/min : 250
C-rod trav.mm : 3.30...3.50

CONSTANT REGULATION

Speed 1/min : 250...350

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13.20...13.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.20...9.40
2nd pressure hPa : 80
C-rod trav.mm : 9.60...9.70

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 700
Del. quantity cm³/ : 154.0...156.0
1000H.: (151.0...159.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 12.20

Speed 1/min : 930...940

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 240.0...280.0
1000H.: (236.0...284.0)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 3.30...3.50
Del. quantity cm³/ : 18.0...23.0
1000H.: (15.5...25.5)
Dispersion cm³/ : 5.00
1000H.: (7.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 E 9
 Edition : 18.09.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 858
 Injection pump
 Pump designation : PE6P120A32OLS3810-10
 EP type number : 0 411 826 734
 Governor
 Governor design. : RQ300/1150PA511-4
 Govenner no. : 0 421 801 341

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM421A

1st version kW : 184.0
 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-gil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing⁰CS: 0-45-120-165-240-285
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 10.40...10.50

Del.quantity cm3/ : 15.8...16.0

100H.: (15.5...16.3)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 4.9...5.1

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 2.60...2.80

2nd speed 1/min: 500

Sleeve travel mm: 5.90...6.10

3rd speed 1/min: 1200

Sleeve travel mm: 6.20...6.50

4th speed 1/min: 1275

Sleeve travel mm: 8.50...9.00

SLEEVE POSITION

Control-lever position

Degree: 108

Speed 1/min: 600

Cont.-rod travelmm: 19.10...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Charge press. hPa : 700

Del. quantity cm³/ : 158.0...160.0
1000H.: (155.0...163.0)
Dispersion cm³/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 19.9

Testing:
1st c-rod trav.mm : 9.40
Speed 1/min : 1195...1210
2nd c-rod trav.mm : 4.00
Speed 1/min : 1250...1280
4th speed 1/min : 1360
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 5.0

Testing:
Speed 1/min : 200
C-rod trav.mm min : 6.70
Speed 1/min : 300
C-rod trav.mm : 4.90...5.10
C-rod trav.mm : 2.00
Speed 1/min : 360...390

compensator (LDA,ADA,ALDA)

1st version
Setting
Speed 1/min : 500
Pressure hPa : -
Contr.-rod trav.mm: 10.00...10.20

Measurement
Speed 1/min : 500
1st pressure hPa : 340
C-rod trav.mm : 10.20...10.30

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 700
Speed 1/min : 600
Del. quantity cm³/ : 157.0...163.0
1000H.: (154.0...166.0)

Dispersion cm³/ : 8.00
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm³/ : 139.0...142.0
1000H.: (136.0...145.0)
Dispersion cm³/ : 8.00
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 9.40
Speed 1/min : 1195...1210

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:
APPLICATION
Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : ENA 11,9 B
 Edition : 18.09.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 861
 Injection pump
 Pump designation : PE6P120A32ORS3176-1
 EP type number : 0 411 826 767
 Governor
 Governor design. : RQV250...1050PA808
 Governer no. : 0 421 813 553

Customer-spec. information
 Customer : ENASA

Engine : 96 R1 AX

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)
 Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1030

 Contr.-rod trav.mm: 13.40...13.50

 Del.quantity cm³/ : 28.2...28.4

 100H.: (27.9...28.7)

 Dispersion cm³/ : 0.5

 100H.: (0.9)

2nd speed 1/min: 250.0
 Contr.-rod trav. m: ?
 Del.quantity cm³/ : 1.7...2.3
 100H.: (1.4...2.6)
 Dispersion cm³/ : 0.8
 100H.: (1.2)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250
 Sleeve travel mm: 1.00...1.40
 2nd speed 1/min: 350
 Sleeve travel mm: 1.70...2.30
 3rd speed 1/min: 700
 Sleeve travel mm: 4.50...5.10
 4th speed 1/min: 1095
 Sleeve travel mm: 8.20...8.40
 5th speed 1/min: 1195
 Sleeve travel mm: 9.40...9.80

SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed 1/min: 1110
 Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1030
 Charge press. hPa : 900
 Del.quantity cm³/ : 282.0...284.0
 1000H.: (279.0...287.0)
 Dispersion cm³/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 44...52

Testing:

1st c-rod trav.mm : 12.40
Speed 1/min : 1090...1100
2nd c-rod trav.mm : 4.00
Speed 1/min : 1180...1210
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: ?

CONSTANT REGULATION

Speed 1/min : 250...350

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13.40...13.50

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.80...10.20
2nd pressure hPa : 550
C-rod trav.mm : 12.60...12.70
3rd pressure hPa : 280
C-rod trav.mm : 10.90...11.10

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 650
Del.quantity cm3/ : 239.0...245.0
1000H.: (236.0...248.0)

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 151.0...153.0
1000H.: (148.0...156.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12.40
Speed 1/min : 1090...1100

B01

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 250.0...280.0
1000H.: (246.0...274.0)

LOW IDLE

Speed 1/min : 250
Del.quantity cm3/ : 17.0...23.0
1000H.: (14.0...26.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : ENA 11,9 D
 Edition : 24.07.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 862
 Injection pump
 Pump designation : PE6P110A32ORS3201
 EP type number : 0 411 816 753
 Governor
 Governor design. : RQ250/1050PA218-1
 Governer no. : 0 421 801 406

Customer-spec. information
 Customer : ENASA

Engine : 96 A4 AZ

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
 : (3.15...3.25)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1030

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm3/ : 12.5...12.7

100H.: (12.2...13.0)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Del.quantity cm3/ : 1.7...2.3

100H.: (1.4...2.6)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Contr.-rod travelmm: 15.70...16.30

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1030

Del.quantity cm3/ : 125.0...127.0

1000H.: (122.0...130.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 600 16.011.0

Setting point:

Speed 1/min : 0 109

Contr.-rod trav.mm: 5...

Testing:

1st c-rod trav.mm : 1110

Speed 1/min : 4.00 1130...

2nd c-rod trav.mm : 1160

Speed 1/min : 1250 0

4th speed 1/min : .00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: ?

Testing:

Speed 1/min : 100
C-rod trav.mm min : ?
Speed 1/min : 250
C-rod trav.mm : ?

CONSTANT REGULATION

Speed 1/min : 250...330

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.00
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 143.0...163.0
1000H.: (139.0...167.0)

LOW IDLE

Speed 1/min : 250
Del.quantity cm³/ : 17.0...23.0
1000H.: (14.0...26.0)
Dispersion cm³/ : 8.00
1000H.: (12.00)

Remarks:

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : STE 10,0 E
 Edition : 28.08.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 863
 Injection pump
 Pump designation : PE6P110A72ORS3204
 EP type number : 0 411 816 754
 Governor
 Governor design. : RQV250...1100PA413-2
 Governer no. : 0 421 813 667

Customer-spec. information
 Customer : STEYR

Engine : WD615.63

1st version kW : 204.0
 Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 12.60...12.70

Del.quantity cm3/ : 16.2...16.4

100H.: (15.9...16.7)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 3.9...4.1

Del.quantity cm3/ : 1.6...2.1

100H.: (1.4...2.4)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250
 Sleeve travel mm: 1.00...1.40

2nd speed 1/min: 350
 Sleeve travel mm: 1.70...2.30

3rd speed 1/min: 700
 Sleeve travel mm: 4.40...5.00

4th speed 1/min: 1145
 Sleeve travel mm: 8.40...8.60

5th speed 1/min: 1235
 Sleeve travel mm: 9.40...9.80

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1140

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Charge press. hPa : 900

Del.quantity cm3/ : 162.0...164.0

1000H.: (159.0...167.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 44...52

Testing:

1st c-rod trav.mm : 11.60
Speed 1/min : 1140...1150
2nd c-rod trav.mm : 4.00
Speed 1/min : 1220...1250
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 8...14

Testing:

Speed 1/min : 100
C-rod trav.mm min : 5.50
Speed 1/min : 250
C-rod trav.mm : 3.90...4.10

CONSTANT REGULATION

Speed 1/min : 250...330

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 12.60...12.70

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 9.60...9.80
2nd pressure hPa : 560
C-rod trav.mm : 11.90...12.00
3rd pressure hPa : 320
C-rod trav.mm : 10.30...10.50

SWITCH-OVER POINT

Speed 1/min : 170 (190)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 700
Del.quantity cm³/ : 178.0...182.0
1000H.: (175.0...185.0)

Charge press. hPa : -
Speed 1/min : 500

Del.quantity cm³/ : 125.0...128.0
1000H.: (122.5...130.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.60
Speed 1/min : 1140...1150

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 115.0...145.0
1000H.: (111.0...149.0)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 S 7
 Edition : 14.08.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 870
 Injection pump
 Pump designation : PE6P110A32OLS3835-1
 EP type number : 0 411 816 755
 Governor
 Governor design. : RQ300/1050PA827-4K
 Governor no. : 0 421 803 096

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 160.0
 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-gil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 13.30...13.40

Del.quantity cm3/ : 13.9...14.1

 100H.: (13.6...14.3)

Dispersion cm3/ : 0.4

 100H.: (0.8)

2nd speed 1/min: 300.0
 Contr.-rod trav. m: 8.8...9.0
 Del.quantity cm3/ : 1.5...2.1
 100H.: (1.2...2.3)
 Dispersion cm3/ : 0.4
 100H.: (0.7)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
 Sleeve travel mm: 1.30...1.50
 2nd speed 1/min: 500
 Sleeve travel mm: 5.50...5.70
 3rd speed 1/min: 900
 Sleeve travel mm: 6.90...7.20
 4th speed 1/min: 1050
 Sleeve travel mm: 7.60...7.90
 5th speed 1/min: 1100
 Sleeve travel mm: 10.10...10.60

SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed 1/min: 600
 Cont.-rod travelmm: 14.70...15.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1050
 Del.quantity cm3/ : 139.0...141.0
 1000H.: (136.5...143.5)

Dispersion cm³/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 32...40

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 15.2

Testing:
1st c-rod trav.mm : 12.30
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1150...1180
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 8...16
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 8.8

Testing:
Speed 1/min : 200
C-rod trav.mm min : 10.50
Speed 1/min : 300
C-rod trav.mm : 8.80...8.90
C-rod trav.mm : 2.00
Speed 1/min : 450...490
Speed 1/min : 550
C-rod trav.mm max : 1.80

TORQUE CONTROL

Dimension a mm : 2.00
Torque-control curve - 1st version
1st speed 1/min : 1050
C-rod trav.mm : 13.30...13.40
2nd speed 1/min : 600
C-rod trav.mm : 13.20...13.40
3rd speed 1/min : 900
C-rod trav.mm : 13.40...13.60

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm³/ : 124.0...127.0
1000H.: (121.0...130.0)
Dispersion cm³/ : 6.00
1000H.: (9.00)
Speed 1/min : 900
Del.quantity cm³/ : 130.0...134.0
1000H.: (127.0...137.0)
Dispersion cm³/ : 6.00
1000H.: 9.00

ROTATIONAL-SPEED LIMITATION

B07

1st version
1mm control-rod travel less than
full-load trav.mm: 12.30
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 S 8
Edition : 28.08.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 846 871

Injection pump
Pump designation : PE6P110A32OLS3835-1
EP type number : 0 411 816 755
Governor
Governor design. : RQV300..1050PA829-4K
Governor no. : 0 421 815 186

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 160.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 13.30...13.40

Del.quantity cm³/ : 13.9...14.1

100H.: (13.6...14.3)

Dispersion cm³/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.8...9.0

Del.quantity cm³/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm³/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.10...1.30

2nd speed 1/min: 500

Sleeve travel mm: 3.70...4.00

3rd speed 1/min: 800

Sleeve travel mm: 5.80...6.10

4th speed 1/min: 1090

Sleeve travel mm: 8.10...8.50

5th speed 1/min: 1170

Sleeve travel mm: 9.50...10.00

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1050

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1050

Del.quantity cm³/ : 139.0...141.0

1000H.: (136.5...143.5)

Dispersion cm³/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 58...66

Testing:

1st c-rod trav.mm : 12.30

Speed 1/min : 1095...1110

2nd c-rod trav.mm : 4.00

Speed 1/min : 1150...1180

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 10...18

Testing:

Speed 1/min : 200

C-rod trav.mm min : 10.30

Speed 1/min : 300

C-rod trav.mm : 8.80...9.00

CONSTANT REGULATION

Speed 1/min : 300...550

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1050

C-rod trav.mm : 13.30...13.40

2nd speed 1/min : 600

C-rod trav.mm : 13.20...13.40

3rd speed 1/min : 900

C-rod trav.mm : 13.40...13.60

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm³/ : 124.0...127.0

1000H.: (121.0...130.0)

Dispersion cm³/ : 6.00

1000H.: (9.00)

Speed 1/min : 900

Del.quantity cm³/ : 130.0...134.0

1000H.: (127.0...137.0)

Dispersion cm³/ : 6.00

1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12.30

Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100

Del. quantity cm³/ : 130.0...150.0

1000H.: (126.0...154.0)

Remarks:

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN
Edition : 24.07.87
Superceeded : 10.85
Calibrating oil : ISO-4113

Combination no. : 0 401 848 083

Injection pump
Pump designation : PE8P110A520/5LS851
EP type number : 0 411 818 046
Governor
Governor design. : RQV250...1150PA670-3
Governor no. : 0 421 813 500

Customer-spec. information
Customer : MAN

Engine : D2848T

1st version kW : 245.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 10.80...10.90

Del.quantity cm3/ : 14.3...14.5

100H.: (14.0...14.7)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 4.9...5.1

Del.quantity cm3/ : 1.8...2.4

100H.: (1.5...2.6)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.10...1.30

2nd speed 1/min: 450

Sleeve travel mm: 2.90...3.30

3rd speed 1/min: 900

Sleeve travel mm: 5.70...6.10

4th speed 1/min: 1150

Sleeve travel mm: 7.60...8.00

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1220

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Charge press. hPa : 1000

Del.quantity cm3/ : 143.0...145.0

1000H.: (140.5...147.5)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 58...66

Setting:
1st c-rod trav.mm : 9.80
Speed 1/min : 1190...1200
2nd c-rod trav.mm : 4.00
Speed 1/min : 1280...1310
4th speed 1/min : 1450
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 5...13

Testing:
Speed 1/min : 100
C-rod trav.mm min : 6.50
Speed 1/min : 250
C-rod trav.mm : 4.90...5.10

CONSTANT REGULATION

Speed 1/min : 280...390

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 1000
Contr.-rod trav.mm: 10.80...10.90

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 9.60...9.80
2nd pressure hPa : 290
C-rod trav.mm : 10.50...10.60
3rd pressure hPa : 230
C-rod trav.mm : 9.90...10.20

SWITCH-OVER POINT

Speed 1/min : 200 (220)

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 1000
Speed 1/min : 700
Del.quantity cm3/ : 135.0...141.0
1000H.: (132.0...144.0)
Charge press. hPa : -
Speed 1/min : 500

Del.quantity cm3/ : 108.0...110.0
1000H.: (105.5...112.5)
Dispersion cm3/ : -
1000H.: (7.50)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 9.80
Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 190.0...210.0
1000H.: (186.0...214.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 4.90...5.10
Del.quantity cm3/ : 18.0...24.0
1000H.: (15.5...26.5)
Dispersion cm3/ : 4.50
1000H.: (7.50)

Remarks:

: MAN-NR. 2-7354

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 A 1
Edition : 18.09.87
Superceeded : 12.9.86
Calibrating oil : ISO-4113

Combination no. : 0 401 848 755

Injection pump
Pump designation : PE8P110A320LS3802-10
EP type number : 0 411 818 710
Governor
Governor design. : RQ300/1150PA437-3
Governor no. : 0 421 801 230

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM422

1st version kW : 184.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315
Tolerance + - ^o : 0.50 (0.75)
SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 750

Contr.-rod trav.mm: 11.30...11.40

Del.quantity cm³/ : 9.9...10.1
 100H.: (9.6...10.3)

Dispersion cm³/ : 0.4
 100H.: (0.7)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 8.5...8.7
Del.quantity cm³/ : 1.4...2.0
 100H.: (1.1...2.2)
Dispersion cm³/ : 0.4
 100H.: (0.7)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 650
Cont.-rod travelmm: 13.20...14.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 750
Del.quantity cm³/ : 99.0...101.0
 1000H.: (96.5...103.5)
Dispersion cm³/ : 4.00
 1000H.: (7.00)

HIGHEST RATED SPEED

Setting point:
Speed 1/min : 650
Contr.-rod trav.mm: 13.6

Testing:
1st c-rod trav.mm : 10.00
Speed 1/min : 1195...1210
2nd c-rod trav.mm : 4.00

Speed 1/min : 1255...1285
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 7.1

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.50
Speed 1/min : 300
C-rod trav.mm : 7.00...7.20
C-rod trav.mm : 2.00
Speed 1/min : 400...440

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1150
C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 600
C-rod trav.mm : 11.20...11.40

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1150
Del.quantity cm³/ : 112.0...116.0
 1000H.: (109.0...119.0)
Dispersion cm³/ : 7.00
 1000H.: (10.0)

SETTING CONTROL-ROD STOP

Speed 1/min : 600

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 10.00
Speed 1/min : 1195...1210

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 130.0...150.0
 1000H.: (126.0...154.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 C
 Edition : 10.08.87
 Superceeded : 23.9.86
 Calibrating oil : ISO-4113
 Combination no. : 0 401 848 781
 Injection pump
 Pump designation : PE8P110A32OLS3842
 EP type number : 0 411 818 714
 Governor
 Governor design. : RQ300/950PA827K
 Governor no. : 0 421 803 092

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 206.0
 Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 950

Contr.-rod trav.mm: 13.50...13.60

Del.quantity cm3/ : 13.3...13.5

100H.: (13.0...13.7)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.8...9.0

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.80...2.00

2nd speed 1/min: 500

Sleeve travel mm: 5.50...5.70

3rd speed 1/min: 775

Sleeve travel mm: 6.40...6.70

4th speed 1/min: 950

Sleeve travel mm: 7.40...7.80

5th speed 1/min: 1080

Sleeve travel mm: 9.50...10.00

SLEEVE POSITION

Control-lever position

Degree: 108

Speed 1/min: 600

Contr.-rod travelmm: 14.70...15.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 950

Del. quantity cm³/ : 133.0...135.0
1000H.: (130.5...137.5)
Dispersion cm³/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 37...45

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 15.2

Testing:

1st c-rod trav.mm : 12.50
Speed 1/min : 995...1010
2nd c-rod trav.mm : 4.00
Speed 1/min : 1055...1085
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 11...19
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 8.9

Testing:

Speed 1/min : 200
C-rod trav.mm min : 10.50
Speed 1/min : 300
C-rod trav.mm : 8.80...9.00
C-rod trav.mm : 2.00
Speed 1/min : 450...490
Speed 1/min : 550
C-rod trav.mm max : 1.80

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 950
C-rod trav.mm : 13.50...13.60
2nd speed 1/min : 600
C-rod trav.mm : 13.00...13.20
3rd speed 1/min : 750
C-rod trav.mm : 13.10...13.30

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del. quantity cm³/ : 121.0...124.0
1000H.: (118.0...127.0)
Dispersion cm³/ : 8.00
1000H.: (11.0)
Speed 1/min : 750
Del. quantity cm³/ : 122.0...126.0
1000H.: (119.0...129.0)
Dispersion cm³/ : (8.00)

ROTATIONAL-SPEED LIMITATION

B17

1st version
1mm control-rod travel less than

full-load trav.mm: 12.50
Speed 1/min : 995...1010

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 14,5 B
Edition : 02.12.86
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 848 785

Injection pump
Pump designation : PE8P120AS20/4LS3834
EP type number : 0 411 828 718
Governor
Governor design. : RQV250...1150PA668-7
Governor no. : 0 421 813 481

Customer-spec. information
Customer : MAN

Engine : D 2848 LE

1st version kW : 375.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.20...4.30
 : (4.15...4.35)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315
Tolerance + - ^o : 0.50 (0.75)
SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.80...11.90

Del.quantity cm³/ : 20.9...21.1

 100H.: (20.6...21.4)

Dispersion cm³/ : 0.5

 100H.: (0.9)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 6.6...6.8
Del.quantity cm³/ : 1.7...2.3
 100H.: (1.4...2.6)
Dispersion cm³/ : 0.8
 100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250
Sleeve travel mm: 1.00...1.20
2nd speed 1/min: 800
Sleeve travel mm: 6.30...6.50
3rd speed 1/min: 1150
Sleeve travel mm: 8.40...8.60

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1150
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1150
Del.quantity cm³/ : 209.0...211.0
 1000H.: (206.0...214.0)
Dispersion cm³/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 117...125

Testing:

1st c-rod trav.mm : 10.80
Speed 1/min : 1190...1200
2nd c-rod trav.mm : 4.00
Speed 1/min : 1330...1360
4th speed 1/min : 1450
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 64...72

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.20
Speed 1/min : 250
C-rod trav.mm : 6.60...6.80
C-rod trav.mm : 2.00
Speed 1/min : 400...460

SWITCH-OVER POINT

Speed 1/min : 200 (220)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.80
Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 190.0...210.0
 1000H.: (186.0...214.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.60...6.80
Del.quantity cm³/ : 17.0...23.0
 1000H.: (14.0...26.0)
Dispersion cm³/ : 8.00
 1000H.: (12.00)

Remarks:

: MAN-NR. 2-7678

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 C 2
Edition : 10.08.87
Superceeded : 13.5.87
Calibrating oil : ISO-4113
Combination no. : 0 401 848 786
Injection pump
Pump designation : PE8P110A320LS3842
EP type number : 0 411 818 714
Governor
Governor design. : RQ300/1050PAB27-3K
Governor no. : 0 421 803 095

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 213.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 12.90...13.00

Del.quantity cm3/ : 13.2...13.4

 100H.: (12.9...13.6)

Dispersion cm3/ : 0.4

 100H.: (0.8)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 8.8...9.0
Del.quantity cm3/ : 1.5...2.1
 100H.: (1.2...2.3)
Dispersion cm3/ : 0.4
 100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 1.30...1.50
2nd speed 1/min: 500
Sleeve travel mm: 5.50...5.70
3rd speed 1/min: 900
Sleeve travel mm: 6.90...7.20
4th speed 1/min: 1050
Sleeve travel mm: 7.60...7.90
5th speed 1/min: 1100
Sleeve travel mm: 10.10...10.60

SLEEVE POSITION

Control-lever position
Degree: 108
Speed 1/min: 600
Cont.-rod travelmm: 14.70...15.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1050

Del. quantity cm³/ : 132.0...134.0
1000H.: (129.5...136.5)
Dispersion cm³/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 40...48

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 15.2

Testing:

1st c-rod trav.mm : 11.90
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1150...1180
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 9...17
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 8.9

Testing:

Speed 1/min : 200
C-rod trav.mm min : 10.50
Speed 1/min : 300
C-rod trav.mm : 8.80 9.00
C-rod trav.mm : 2.00
Speed 1/min : 450...490
Speed 1/min : 550
C-rod trav.mm max : 1.80

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1050
C-rod trav.mm : 12.90...13.00
2nd speed 1/min : 600
C-rod trav.mm : 12.80...13.00
3rd speed 1/min : 750
C-rod trav.mm : 13.20...13.40

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del. quantity cm³/ : 119.0...122.0
1000H.: (116.0...125.0)
Dispersion cm³/ : 8.00
1000H.: (11.0)
Speed 1/min : 900
Del. quantity cm³/ : 130.0...134.0
1000H.: (127.0...137.0)
Dispersion cm³/ : (8.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 11.90
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 15,8 0
Edition : 14.08.87
Superceeded : 9.3.87
Calibrating oil : ISO-4113

Combination no. : 0 401 849 729

Injection pump
Pump designation : PE10P110A920/5LS3073
EP type number : 0 411 819 701
Governor
Governor design. : RQV300...1150PA816
Governor no. : 0 421 813 559

Customer-spec. information
Customer : KHD

Engine : BF10L413F

1st version kW : 252.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 10- 9- 4- 3- 6-
5- 8- 7- 2

SD ang. spacing^oCS: 0-27-72-99-144-171-
216-243-288-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 10.60...10.70

Del.quantity cm³/ : 12.0...12.2

100H.: (11.7...12.4)

Dispersion cm³/ : 0.4

100H.: (0.7)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.7...6.9

Del.quantity cm³/ : 1.4...1.9

100H.: (-)

Dispersion cm³/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.30...1.40

2nd speed 1/min: 390

Sleeve travel mm: 2.40...2.80

3rd speed 1/min: 450

Sleeve travel mm: 2.80...3.20

4th speed 1/min: 1180

Sleeve travel mm: 8.30...8.40

5th speed 1/min: 1260

Sleeve travel mm: 9.10...9.30

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1190

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Charge press. hPa : 700

Del.quantity cm³/ : 120.0...122.0

1000H.: (117.5...124.5)

Dispersion cm³/ : 4.00
1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 59...67

Testing:

1st c-rod trav.mm : 9.60

Speed 1/min : 1180...1190

2nd c-rod trav.mm : 4.00

Speed 1/min : 1265...1295

4th speed 1/min : 1400

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 15...23

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.20

Speed 1/min : 300

C-rod trav.mm : 6.70...6.90

CONSTANT REGULATION

Speed 1/min : 320...480

compensator (LDA, ADA, ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 700

Contr.-rod trav.mm: 10.60...10.70

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 9.70...9.80

2nd pressure hPa : 355

C-rod trav.mm : 10.40...10.50

3rd pressure hPa : 310

C-rod trav.mm : 9.90...10.10

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 800

Del.quantity cm³/ : 116.0...120.0

1000H.: (113.0...123.0)

Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm³/ : 95.0...99.0
1000H.: (92.5...101.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 9.60
Speed 1/min : 1180...1190

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 130.0...160.0
1000H.: (-)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION
Excavator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 18,2 C
 Edition : 26.06.87
 Superceeded : 12.9.86
 Calibrating oil : ISO-4113
 Combination no. : 0 401 849 734
 Injection pump
 Pump designation : PE10P120A520/SLS3843
 EP type number : 0 411 829 707
 Governor
 Governor design. : RQ300/1000PA837
 Governer no. : 0 421 801 372

Customer-spec. information
 Customer : MAN

Engine : D2840LF

1st version kW : 338.0
 Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Perforated-plate diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.90...4.00
 : (3.85...4.05)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 10- 9- 4- 1- 8- 7
 - 6- 3- 5- 2

SD ang. spacing⁰CS: 0-45-72-117-144-189-
 216-261-288-333
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 10

BASIC SETTING

1st speed 1/mi: 1000

 Contr.-rod trav.mm: 11.30...11.40

 Del.quantity cm3/ : 20.1...20.3

 100H.: (19.8...20.6)

 Dispersion cm3/ : 0.5

 100H.: (0.9)

2nd speed 1/min: 300.0
 Contr.-rod trav. m: 6.0...6.2
 Del.quantity cm3/ : 1.7...2.3
 100H.: (1.4...2.6)
 Dispersion cm3/ : 0.8
 100H.: (1.2)

SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed 1/min: 600
 Cont.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1000
 Charge press. hPa : 1000
 Del.quantity cm3/ : 201.0...203.0
 1000H.: (198.0...206.0)
 Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:
 Speed 1/min : 600
 Contr.-rod trav.mm: 20.0

Testing:
 1st c-rod trav.mm : 10,30
 Speed 1/min : 1045...1060

2nd c-rod trav.mm : 4.00
Speed 1/min : 1125...1155
4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 250 6.1
Setting point w/out aux. spring
Speed 1/min : 1
Contr.-rod trav.mm: 00 7.60 25

Testing:

Speed 1/min : 0 6.
C-rod trav.mm min : 00...6
Speed 1/min : .20
C-rod trav.mm : 2.00 365...4
C-rod trav.mm : 05 0

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1000
C-rod trav.mm : 11.80...11.90
2nd speed 1/min : 600
C-rod trav.mm : 11.80...12.00

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 1000
Contr.-rod trav.mm: 11.30...11.40

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 10.10...10.20
2nd pressure hPa : 530
C-rod trav.mm : 10.40...10.50
3rd pressure hPa : 650
C-rod trav.mm : 10.90...11.10

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 144.0...146.0
1000H.: (141.0...149.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.30
Speed 1/min : 1045...1060

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 190.0...210.0
1000H.: (186.0...214.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.00...6.20
Del.quantity cm3/ : 17.0...23.0
1000H.: (14.0...26.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

: MAN-NR. 2-7778

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 18,2 C1
Edition : 26.06.87
Superceeded : 12.9.86
Calibrating oil : ISO-4113

Combination no. : 0 401 849 735

Injection pump
Pump designation : PE10P120A520/5LS3843
EP type number : 0 411 829 707
Governor
Governor design. : RQV300...1000PA838
Governor no. : 0 421 813 585

Customer-spec. information
Customer : MAN

Engine : D284OLF

1st version kW : 338.0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.90...4.00
 : (3.85...4.05)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 10- 9- 4- 1- 8- 7
 - 6- 3- 5- 2

SD ang. spacing^oCS: 0-45-72-117-144-189-
 216-261-288-333

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 10

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 11.30...11.40

Del.quantity cm³/ : 20.1...20.3

100H.: (19.8...20.6)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.0...6.2

Del.quantity cm³/ : 1.7...2.3

100H.: (1.4...2.6)

Dispersion cm³/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.00...1.40

2nd speed 1/min: 500

Sleeve travel mm: 3.10...3.50

3rd speed 1/min: 850

Sleeve travel mm: 6.60...6.90

4th speed 1/min: 1000

Sleeve travel mm: 7.70...7.90

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1150

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Charge press. hPa : 1000

Del.quantity cm³/ : 201.0...203.0
1000H.: (198.0...206.0)

Dispersion cm³/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 1150

Contr.-rod trav.mm: 16.5

Testing:

1st c-rod trav.mm : 10.30

Speed 1/min : 1040...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1115...1145

4th speed 1/min : 1250

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.1

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.60

Speed 1/min : 250

C-rod trav.mm : 6.00...6.20

CONSTANT REGULATION

Speed 1/min : 335...445

compensator (LDA, ADA, ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 1000

Contr.-rod trav.mm: 11.30...11.40

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 10.10...10.20

2nd pressure hPa : 530

C-rod trav.mm : 10.40...10.50

3rd pressure hPa : 650

C-rod trav.mm : 10.90...11.10

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 500

Del. quantity cm³/ : 144.0...146.0
1000H.: (141.0...149.0)

ROTATIONAL-SPEED LIMITATION

1st version
Imm control-rod travel less than

full-load trav.mm: 10.30
Speed 1/min : 1040...1050

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 190.0...210.0
1000H.: (186.0...214.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.00...6.20
Del. quantity cm³/ : 17.0...23.0
1000H.: (14.0...26.0)
Dispersion cm³/ : 8.00
1000H.: (12.00)

Remarks: : MAN-NR. 2-7779

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 18,3 K
Edition : 26.06.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 849 737

Injection pump
Pump designation : PE10P110A320LS3844
EP type number : 0 411 819 710
Governor
Governor design. : RQ300/1050PA827-5K
Governor no. : 0 421 803 097

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 443

1st version kW : 265.0

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 10- 9- 4- 1- 8- 7
 - 6- 3- 5- 2

SD ang. spacing^oCS: 0-45-72-117-144-189-
 216-261-288-333

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 10

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 12.90...13.00

Del.quantity cm³/ : 13.3...13.5

100H.: (13.0...13.7)

Dispersion cm³/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.9...8.1

Del.quantity cm³/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm³/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.60...1.80

2nd speed 1/min: 500

Sleeve travel mm: 5.50...5.70

3rd speed 1/min: 900

Sleeve travel mm: 7.00...7.30

4th speed 1/min: 1050

Sleeve travel mm: 7.60...7.90

5th speed 1/min: 1100

Sleeve travel mm: 9.50...10.00

SLEEVE POSITION

Control-lever position

Degree: 108

Speed 1/min: 600

Contr.-rod travelmm: -16.30...17.30

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1050

CO4

Del.quantity cm³/ : 133.0...135.0
 1000H.: (130.5...137.5)

Dispersion cm³/ : 4.00

1000H.: (8.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 102...110

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 16.6

Testing:

1st c-rod trav.mm : 11.90

Speed 1/min : 1095...1110

2nd c-rod trav.mm : 4.00

Speed 1/min : 1160...1190

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever

position degrees: 78...86

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 8.0

Testing:

Speed 1/min : 200

C-rod trav.mm min : 9.30

Speed 1/min : 300

C-rod trav.mm : 7.90...8.10

C-rod trav.mm : 2.00

Speed 1/min : 390...430

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1050

C-rod trav.mm : 12.90...13.00

2nd speed 1/min : 600

C-rod trav.mm : 12.80...13.00

3rd speed 1/min : 900

C-rod trav.mm : 13.20...13.40

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm³/ : 119.0...122.0

1000H.: (116.0...125.0)

Dispersion cm³/ : 6.00

1000H.: (9.00)

Speed 1/min : 900

Del.quantity cm³/ : 127.0...131.0

1000H.: (124.0...134.0)

Dispersion cm³/ : 6.00

1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.90
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 16,0 D2
Edition : 24.07.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 849 740
Injection pump
Pump designation : PE10P110A920/SLS3164
EP type number : 0 411 819 708
Governor
Governor design. : RQV300...1150PAS49-3
Governor no. : 0 421 813 664

Customer-spec. information
Customer : KHD

Engine : BF10LS13

1st version kW : 294.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-10- 9- 4- 3- 6-
5- 8- 7- 2

SD ang. spacing^oCS: 0-27-72-99-144-171-
216-243-288-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 12.80...12.90

Del.quantity cm³/ : 14.8...15.0

100H.: (14.5...15.3)

Dispersion cm³/ : 0.4

100H.: (0.7)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.4...6.6

Del.quantity cm³/ : 1.2...1.7

100H.: (1.0...2.0)

Dispersion cm³/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.00...1.40

2nd speed 1/min: 450

Sleeve travel mm: 2.60...3.20

3rd speed 1/min: 700

Sleeve travel mm: 4.40...5.00

4th speed 1/min: 1195

Sleeve travel mm: 8.10...8.30

5th speed 1/min: 1310

Sleeve travel mm: 9.20...9.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1220

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Charge press. hPa : 1200

Del.quantity cm³/ : 148.5...150.5

1000H.: (145.0...153.0)

Dispersion cm³/ : 4.00
1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 61...69

Testing:

1st c-rod trav.mm : 11.80

Speed 1/min : 1195...1205

2nd c-rod trav.mm : 4.00

Speed 1/min : 1295...1325

4th speed 1/min : 1450

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 9...17

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7.90

Speed 1/min : 300

C-rod trav.mm : 6.40...6.60

CONSTANT REGULATION

Speed 1/min : 300...530

TORQUE CONTROL

Dimension a mm : 0.40

Torque-control curve - 1st version

1st speed 1/min : 1150

C-rod trav.mm : 12.80...12.90

2nd speed 1/min : 650

C-rod trav.mm : 13.20...13.30

3rd speed 1/min : 840

C-rod trav.mm : 13.10...13.30

4th speed 1/min : 1010

C-rod trav.mm : 12.90...13.10

Pressure hPa : 1200

Contr.-rod trav.mm: 13.20...13.30

1st pressure hPa : -

C-rod trav.mm : 11.70...11.80

2nd pressure hPa : 850

C-rod trav.mm : 12.75...12.85

3rd pressure hPa : 370

C-rod trav.mm : 12.00...12.20

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1200

Speed 1/min : 650

Del.quantity cm³/ : 154.0...158.0

1000H.: (151.0...161.0)

Charge press. hPa : -

Speed 1/min : 450
Del.quantity cm3/ : 118.5...121.5
1000H.: (116.0...124.0)

ROTATIONAL-SPEED LIMITATION

1st version
Imm control-rod travel less than

full-load trav.mm: 11.80
Speed 1/min : 1195...1205

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 135.0...165.0
1000H.: (131.0...169.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.40...6.60
Del.quantity cm3/ : 12.5...17.5
1000H.: (10.0...20.0)
Dispersion cm3/ : 4.50
1000H.: (7.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IFS 30,8 A
Edition : 27.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 401 868 025

Injection pump
Pump designation : PE8P130A520/6LS450-1
EP type number : 0 411 838 039
Governor
Governor design. : RSUV250...825P10A342
R
Governor no. : 0 421 829 081

Customer-spec. information
Customer : ISOTTA-FRASCHINI

Engine : ID36N-8V

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 2- 6- 3- 4- 5-
7- 8

SD ang. spacing^oCS: 0-45-90-135-180-225-
270-315
Tolerance + - ^o : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 825

Contr.-rod trav.mm: 10.00...10.10

Del.quantity cm³/ : 18.6...18.9

100H.: (18.2...19.2)

Dispersion cm³/ : 0.6

100H.: (1.0)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.8...7.0

Del.quantity cm³/ : 2.0...2.6

100H.: (1.6...3.0)

Dispersion cm³/ : 1.0

100H.: (1.4)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.40

Governor-spring reload

Notch setting x : 3.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 825

Del.quantity cm³/ : 186.0...189.0

1000H.: (182.5...192.5)

Dispersion cm³/ : 6.00

1000H.: (10.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 47...55

Testing:

1st c-rod trav.mm : 9.00

Speed 1/min : 865...875

2nd c-rod trav.mm : 4.00

Speed 1/min : 875...905

3rd c-rod trav.mm : 4.00

C10

Speed 1/min : 880...910
4th speed 1/min : 1050
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever

position degrees: 13...21

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.4

Speed 1/min : 250

C-rod trav.mm : 6.80...7.00

C-rod trav.mm : 2.00

Speed 1/min : 285...345

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 825

C-rod trav.mm : 10.00...10.10

2nd speed 1/min : 450

C-rod trav.mm : 10.00...10.20

3rd speed 1/min : 300

C-rod trav.mm : 11.20...11.80

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9.00

Speed 1/min : 865...875

LOW IDLE

Speed 1/min : 250

Contr.-rod trav.mm: 6.80...7.00

Del.quantity cm³/ : 20.0...26.0

1000H.: (16.0...30.0)

Dispersion cm³/ : 10.00

1000H.: (14.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 21,6 A2
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 870 090
Injection pump
Pump designation : PE12P120A520/SRS428-1
EP type number : 0 411 820 034
Governor
Governor design. : RSUV300...1150POA324
DR
Governor no. : 0 421 829 104

Customer-spec. information
Customer : MWM

Engine : TBD 234 V 12

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025
Inlet press., bar : 1.50
Calibrating nozzle-holder
assembly : 1 688 901 019
Opening
pressure, bar : 207...210
Perforated-plate
diameter mm : 0,8
Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 2- 9-10- 5- 6-
 11- 12- 3- 4- 7- 8

SD ang. spacing^oCS: 0-30-60-90-120-150-
 180-210-240-270-300-
 330

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 9.60...9.70

Del.quantity cm3/ : 17.0...17.4

100H.: (16.7...17.7)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 5.9...6.1

Del.quantity cm3/ : 2.8...3.6

100H.: (2.5...3.9)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 2.00

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 60...68

Testing:

1st c-rod trav.mm : 8.60

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4.00

Speed 1/min : 1205...1235

4th speed 1/min : 1370

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever

position degrees: 17...25

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 5.5

Speed 1/min : 300
C-rod trav.mm : 5.40...5.60
C-rod trav.mm : 2.00
Speed 1/min : 350...410

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 8.60
Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 240.0...260.0
1000H.: (236.0...264.0)

Remarks:
Full-load delivery not known. Set
according to engine test report.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 Q
Edition : 09.03.87
Superceeded : 19.12.86
Calibrating oil : ISO-4113

Combination no. : 0 401 870 700

Injection pump
Pump designation : PE12P110A320LS3820-11
EP type number : 0 411 810 706
Governor
Governor design. : RSV425...1050POA824-1
Governor no. : 0 421 833 218

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 424

1st version kW : 286.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 150...170

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7

SD ang. spacing^oCS: 0-45-60-105-120-165-
 180-225-240-285-300-
 345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 11.40...11.50

Del.quantity cm3/ : 11.5...11.7
 100H.: (11.2...11.9)

Dispersion cm3/ : 0.4
 100H.: (0.8)

2nd speed 1/min: 425.0
Contr.-rod trav. m: 7.5...7.8
Del.quantity cm3/ : 1.4...2.0
 100H.: (1.1...2.2)
Dispersion cm3/ : 0.4
 100H.: (0.7)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1000
Del.quantity cm3/ : 115.0...117.0
 1000H.: (112.5...119.5)
Dispersion cm3/ : 4.00
 1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 34...42

Testing:
1st c-rod trav.mm : 10.40

Speed 1/min : 1065...1070
2nd c-rod trav.mm : 4.00
Speed 1/min : 1120...1133

LOWEST RATED SPEED I

Control-lever
position degrees: 14...22
Setting point w/out aux. spring
Speed 1/min : 425
Contr.-rod trav.mm: 7.9

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.30
Speed 1/min : 425
C-rod trav.mm : 7.80...8.00

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 95.0...100.0
1000H.: (92.0...103.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.40
Speed 1/min : 1065...1070

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:

Observe VDT-I-420/120

0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 Q 1
Edition : 15.05.87
Superceeded : 12.9.86
Calibrating oil : ISO-4113
Combination no. : 0 401 870 701
Injection pump
Pump designation : PE12P110A320LS3820-
11
EP type number : 0 411 810 706
Governor
Governor design. : RSV350...750POA824-5
Governor no. : 0 421 833 231

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 424

1st version kW : 247.0

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 150...170

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-
 180-225-240-285-300-

SD ang. spacing°CS: 345
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 12

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.70...12.80

Del.quantity cm3/ : 12.6...12.8
 100H.: (12.3...13.0)

Dispersion cm3/ : 0.4
 100H.: (0.8)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 7.7...7.9
Del.quantity cm3/ : 1.4...2.0
 100H.: (1.1...2.2)
Dispersion cm3/ : 0.4
 100H.: (0.7)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...1.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Del.quantity cm3/ : 126.0...128.0
 1000H.: (123.5...130.5)
Dispersion cm3/ : 4.00
 1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 22...30

Testing:
1st c-rod trav.mm : 11.70
 Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00

Speed 1/min : 780...793

LOWEST RATED SPEED I

Control-lever

position degrees: 10...18

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 7.8

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.00

Speed 1/min : 350

C-rod trav.mm : 7.70...7.90

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.40

Speed 1/min : 1170...1180

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm³/ : 140.0...160.0

1000H.: (136.0...164.0)

Remarks:

Observe VDT-I-420/120

0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 Q 2
 Edition : 10.09.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 870 706
 Injection pump
 Pump designation : PE12P110A320LS3820-11
 EP type number : 0 411 810 710
 Governor
 Governor design. : RSV42S...1050POA824-10
 Governer no. : 0 421 833 251

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 424

1st version kW : 286.0
 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 150...170

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-
 180-225-240-285-300-
 345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 11.40...11.50

Del.quantity cm3/ : 11.5...11.7

100H.: (11.2...11.9)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 425.0

Contr.-rod trav. m: 7.8...8.0

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/ : 0.4

100H.: (0.7)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : ?

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Del.quantity cm3/ : 115.0...117.0

1000H.: (112.5...119.5)

Dispersion cm3/ : 4.00

1000H.: (8.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 34...42

Testing:
1st c-rod trav.mm : 10.40
Speed 1/min : 1170...1180
2nd c-rod trav.mm : 4.00
Speed 1/min : 1235...1265

LOWEST RATED SPEED I

Control-lever
position degrees: 14...22
Setting point w/out aux. spring
Speed 1/min : 425
Contr.-rod trav.mm: 7.9

Testing:
Speed 1/min : 100
C-rod trav.mm min : 9.30
Speed 1/min : 425
C-rod trav.mm : 7.80...8.00

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 95.0...100.0
1000H.: (92.0...103.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.40
Speed 1/min : 1170...1180

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:

Observe VDT-I-420/120

0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 T 1
Edition : 19.12.86
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 870 706
Injection pump
Pump designation : PE12P110A320LS3837-1
EP type number : 0 411 810 710
Governor
Governor design. : RSV425...1050POA824-10
Governor no. : 0 421 833 251

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 424

1st version kW : 286.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 150...170

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

C20

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-
SD ang. spacing°CS: 180-225-240-285-300-
 345
Tolerance + - ° : 0.50 (0.75)
SD mark cyl. no. : 12

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 11.40...11.50

Del.quantity cm3/ : 11.5...11.7

100H.: (11.2...11.9)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 425.0
Contr.-rod trav. m: 7.8...8.0
Del.quantity cm3/ : 1.4...2.0
100H.: (1.1...2.2)
Dispersion cm3/ : 0.4
100H.: (0.7)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
Notch setting x : ?

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1000
Del.quantity cm3/ : 115.0...117.0
1000H.: (112.5...119.5)
Dispersion cm3/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 34...42

Testing:
1st c-rod trav.mm : 10.40
Speed 1/min : 1170...1180
2nd c-rod trav.mm : 4.00
Speed 1/min : 1235...1265

LOWEST RATED SPEED I

Control-lever
position degrees: 14...22
Setting point w/out aux. spring
Speed 1/min : 425
Contr.-rod trav.mm: 7.9

Testing:
Speed 1/min : 100
C-rod trav.mm min : 9.30
Speed 1/min : 425
C-rod trav.mm : 7.80...8.00

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 95.0...100.0
1000H.: (92.0...103.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 10.40
Speed 1/min : 1170...1180

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:

Observe VDT-I-420/120

0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 S 2
 Edition : 13.05.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 870 708
 Injection pump
 Pump designation : PE12P120A32OLS3836-4
 EP type number : 0 411 820 726
 Governor
 Governor design. : RSV425...1050POA525
 Governor no. : 0 421 833 254

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 424 A

1st version kW : 385.0
 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 150...170

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length n : 6,00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-
 180-225-240-285-300-
 345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 11.10...11.20

Del.quantity cm3/ : 16.0...16.2

100H.: (15.7...16.5)

Dispersion cm3/ : 0.5

100H.: (0.8)

2nd speed 1/min: 425.0

Contr.-rod trav. m: 4.6...4.8

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Charge press. hPa : 700

Del.quantity cm3/ : 160.0...162.0

1000H.: (157.0...165.0)

Dispersion cm3/ : 5.00

1000H.: (8.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 34...42

Testing:
1st c-rod trav.mm : 10.10
Speed 1/min : 1065...1070
2nd c-rod trav.mm : 4.00
Speed 1/min : 1100...1113
4th speed 1/min : 1300
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 16...24
Setting point w/out aux. spring
Speed 1/min : 425
Contr.-rod trav.mm: 4.7

Testing:
Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 425
C-rod trav.mm : 4.60...4.80

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00
compensator (LDA,ADA,ALDA)

1st version
Setting
Speed 1/min : 500
Pressure hPa : -
Contr.-rod trav.mm: 9.70...9.90

Measurement

Speed 1/min : 500
1st pressure hPa : 320
C-rod trav.mm : 9.80...9.90
2nd pressure hPa : 450
C-rod trav.mm : 10.50...10.70

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 700
Speed 1/min : 650
Del. quantity cm3/ : 164.0...170.0
1000H.: (161.0...173.0)
Dispersion cm3/ : 8.00
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm3/ : 128.0...130.0
1000H.: (125.0...133.0)
Dispersion cm3/ : 8.00
1000H.: (-)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 10.10
Speed 1/min : 1065...1070

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm3/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

Observe VDT-I-420/120

APPLICATION
Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6010
 Edition : 09.03.87
 Superceeded : 10.85
 Calibrating oil : ISO-4113

Combination no. : 0 401 876 293

Injection pump
 Pump designation : PE6P120A32ORS415-1Z
 EP type number : 0 411 826 136
 Governor
 Governor design. : RSV250...900P5A508
 Governer no. : 0 421 833 193

Customer-spec. information
 Customer : DAF

Engine : DKX 1160E

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2,80...2,90
 : (2,75...2,95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 11.70...11.80

Del.quantity cm3/ : 17.4...17.6

100H.: (17.1...17.9)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.7...6.9

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 4.50

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 600

Charge press. hPa : 700

Del.quantity cm3/ : 174.0...176.0

1000H.: (171.0...179.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 45...53

Testing:

1st c-rod trav.mm : 10.00

Speed 1/min : 935...945

2nd c-rod trav.mm : 4.00

Speed 1/min : 1010...1040

3rd c-rod trav.mm : 4.00

Speed 1/min : 1020...1050

4th speed 1/min : 1180

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 22...30
Setting point w/out aux. spring
Speed 1/min : 250
Contr.-rod trav.mm: 6.0
Speed 1/min : 250
C-rod trav.mm : 6.40...6.60
C-rod trav.mm : 2.00
Speed 1/min : 395...455

TORQUE CONTROL

Dimension a mm : 875 1
Torque-control curve - 1st version
1st speed 1/min : 1.00.
C-rod trav.mm : ..11.10 600 1
2nd speed 1/min : 1.90.
C-rod trav.mm : ..12.00 725 1
3rd speed 1/min : 1.50.
C-rod trav.mm : ..11.70 775 1
4th speed 1/min : 1.20.
C-rod trav.mm : ..11.40 0 0

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 700
Contr.-rod trav.mm: 11.70...11.80

Measurement

Speed 1/min : 600
1st pressure hPa : -
C-rod trav.mm : 10.40...10.60
2nd pressure hPa : 300
C-rod trav.mm : 11.10...11.20
3rd pressure hPa : 255
C-rod trav.mm : 10.50...10.90

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 875
Del.quantity cm3/ : 170.0...174.0
1000H.: (167.0...177.0)
Speed 1/min : 600
Del.quantity cm3/ : 140.0...142.0
1000H.: (137.0...145.0)

ROTATIONAL-SPEED LIMITATION

1st version

C25

1mm control-rod travel less than

full-load trav.mm: 10.00
Speed 1/min : 935...945

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 305.0...345.0
1000H.: (301.0...349.0)
Contr.-rod trav.mm: 19.50...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.40...6.60

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6012
Edition : 03.04.87
Superceeded : 10.85
Calibrating oil : ISO-4113

Combination no. : 0 401 876 296

Injection pump
Pump designation : PE6P120A320RS415-1
EP type number : 0 411 826 123
Governor
Governor design. : RSV250...1100PSA508-
2
Governor no. : 0 421 833 195

Customer-spec. information
Customer : DAF

Engine : DKX 1160

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 0 417 413 025

Inlet press., bar : 1,50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 11.60...11.70

Del.quantity cm3/ : 18.7...18.9

100H.: (18.4...19.2)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.7...6.9

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 4.75

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 700

Del.quantity cm3/ : 187.0...189.0

1000H.: (184.0...192.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 49...57

Testing:

1st c-rod trav.mm : 10.60

Speed 1/min : 1135...1145

2nd c-rod trav.mm : 4.00

Speed 1/min : 1200...1230

3rd c-rod trav.mm : 4.00

Speed 1/min : 1270...1300

C27

4th speed 1/min : 1430
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 19...27

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.0

Speed 1/min : 250

C-rod trav.mm : 5.90...6.10

C-rod trav.mm : 2.00

Speed 1/min : 600...700

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 850

C-rod trav.mm : 11.80...11.90

2nd speed 1/min : 400

C-rod trav.mm : 11.80...12.00

3rd speed 1/min : 300

C-rod trav.mm : 12.10...12.60

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : 700

Contr.-rod trav.mm: 11.60...11.70

Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 10.30...10.50

2nd pressure hPa : 300

C-rod trav.mm : 11.30...11.40

3rd pressure hPa : 255

C-rod trav.mm : 10.80...11.10

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm3/ : 140.0...142.0

1000H.: (137.0...145.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.60

Speed 1/min : 1135...1145

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 305.0...345.0
1000H.: (301.0...349.0)
Contr.-rod trav.mm: 19.50...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.40...6.60

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6T27
Edition : 09.03.87
Superceeded : 10.85
Calibrating oil : ISO-4113

Combination no. : 0 401 876 297

Injection pump
Pump designation : PE6P110A32ORS385-1
EP type number : 0 411 816 146
Governor
Governor design. : RSV250...750P7A507
Governor no. : 0 421 833 185

Customer-spec. information
Customer : DAF

Engine : DKT 1160

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.80...13.00

Del.quantity cm3/ : 16.9...17.1
100H.: (16.7...17.4)

Dispersion cm3/ : 0.4
100H.: (0.7)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 6.8...7.0
Del.quantity cm3/ : 2.5...3.3
100H.: (2.2...3.5)
Dispersion cm3/ : 0.4
100H.: (0.7)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...0.70

Governor-spring reload
Notch setting x : 4.75

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Del.quantity cm3/ : 169.5...171.5
1000H.: (167.0...174.0)
Dispersion cm3/ : 4.00
1000H.: (7.50)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 42...50

Testing:

1st c-rod trav.mm : 11.80
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 780...795
4th speed 1/min : 950
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26
Setting point w/out aux. spring

Speed 1/min : 250
Contr.-rod trav.mm: 6.9
Speed 1/min : 250
C-rod trav.mm : 6.80...7.00
C-rod trav.mm : 2.00
Speed 1/min : 275...315

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 11.60

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.80...7.00
Del.quantity cm3/ : 25.0...33.0
1000H.: (22.5...35.5)
Dispersion cm3/ : 4.50
1000H.: (7.50)

Remarks:

APPLICATION
Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6T29
 Edition : 09.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 876 298
 Injection pump
 Pump designation : PE6P120A32ORS385-2
 EP type number : 0 411 826 132
 Governor
 Governor design. : RSV250...750P7A507
 Governor no. : 0 421 833 185

Customer-spec. information
 Customer : DAF

Engine : DKX 1160

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Perforated-plate diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

D03

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
 Tolerance + -^o : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11.60...11.70

Del.quantity cm³/ : 22.2...22.4

100H.: (21.9...22.7)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 4.9...5.1

Del.quantity cm³/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm³/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP**1st version**

Speed 1/min: 700

Del.quantity cm³/ : 222.5...224.5

1000H.: (219.5...227.5)

Dispersion cm³/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED**1st version**

Control-lever

position degrees: 43...51

Testing:

1st c-rod trav.mm : 10.60

Speed 1/min : 750...755

2nd c-rod trav.mm : 4.00

Speed 1/min : 780...795

4th speed 1/min : 950

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 19...27

Setting point w/out aux. spring

Speed 1/min : 250
Contr.-rod trav.mm: 5.0
Speed 1/min : 250
C-rod trav.mm : 4.90...5.10
C-rod trav.mm : 2.00
Speed 1/min : 250...290

SET IDLE AUXILIARY SPRING
Speed 1/min : 2.00

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 10.60

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 4.90...5.10
Del.quantity cm3/ : 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

APPLICATION
Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 8,3 012
 Edition : 27.03.87
 Superceeded : 10.85
 Calibrating oil : ISO-4113
 Combination no. : 0 401 876 299
 Injection pump
 Pump designation : PE6P100A72ORS447-1
 EP type number : 0 411 806 195
 Governor
 Governor design. : RSV250...750P7A507-1
 Governer no. : 0 421 833 200

Customer-spec. information
 Customer : DAF

Engine : DHT 825

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
 : (3.15...3.35)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 700

 Contr.-rod trav.mm: 12.70...12.80

 Del.quantity cm3/ : 14.2...14.4

 100H.: (14.0...14.6)

 Dispersion cm3/ : 0.3

 100H.: (0.6)

 2nd speed 1/min: 250.0
 Contr.-rod trav. m: 5.3...5.5
 Del.quantity cm3/ : 0.9...1.3
 100H.: (0.6...1.5)
 Dispersion cm3/ : 0.3
 100H.: (0.5)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
 Notch setting x : 4.75

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 700
 Del.quantity cm3/ : 142.0...144.0
 1000H.: (140.0...146.0)
 Dispersion cm3/ : 3.50
 1000H.: (6.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 42...50

Testing:
 1st c-rod trav.mm : 11.70
 Speed 1/min : 750...755
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 780...795
 4th speed 1/min : 950
 C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
 position degrees: 17...25
 Setting point w/out aux. spring

Speed 1/min : 250
Contr.-rod trav.mm: 5.4
Speed 1/min : 250
C-rod trav.mm : 5.30...5.50
C-rod trav.mm : 2.00
Speed 1/min : 250...290

SET IDLE AUXILIARY SPRING
Speed 1/min : 2.00

STARTING FUEL DELIVERY

Speed 1/min : 100

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 5.30...5.50
Del.quantity cm3/ : 9.0...13.0
1000H.: (6.5...15.5)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

APPLICATION
Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6 U6
Edition : 27.03.87
Superceeded : 10.85
Calibrating oil : ISO-4113

Combination no. : 0 401 876 300

Injection pump
Pump designation : PE6P110A72ORS441-1
EP type number : 0 411 816 153
Governor
Governor design. : RSV250...75OP7A507-1
Governor no. : 0 421 833 200

Customer-spec. information
Customer : DAF

Engine : DHS 825

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11.60...11.70

Del.quantity cm3/ : 14.2...14.4
100H.: (13.9...14.6)

Dispersion cm3/ : 0.4
100H.: (0.7)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 4.8...5.0
Del.quantity cm3/ : 0.9...1.3
100H.: (0.6...1.5)
Dispersion cm3/ : 0.4
100H.: (0.7)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
Notch setting x : 5.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Del.quantity cm3/ : 142.0...144.0
1000H.: (139.5...146.5)
Dispersion cm3/ : 4.00
1000H.: (7.50)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 43...51

Testing:
1st c-rod trav.mm : 10.60
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 780...795
4th speed 1/min : 950
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 19...27
Setting point w/out aux. spring

Speed 1/min : 250
Contr.-rod trav.mm: 4.9
Speed 1/min : 250
C-rod trav.mm : 4.80...5.00
C-rod trav.mm : 2.00
Speed 1/min : 250...290

SET IDLE AUXILIARY SPRING
Speed 1/min : 2.00

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 10.40

STARTING FUEL DELIVERY

Speed 1/min : 100

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 4.80...5.00
Del.quantity cm³/ : 9.0...13.0
1000H.: (6.5...15.5)
Dispersion cm³/ : 4.50
1000H.: (7.50)

Remarks:

APPLICATION
Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6 W1
 Edition : 09.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 876 303
 Injection pump
 Pump designation : PE6P100A32ORS384-1
 EP type number : 0 411 806 189
 Governor
 Governor design. : RSV250...1100PSA510
 Governer no. : 0 421 833 191

Customer-spec. information
 Customer : DAF

Engine : DK 1160V

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 3.20...3.30
 : (3.15...3.35)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 600

 Contr.-rod trav.mm: 11.50...11.60

 Del.quantity cm3/ : 11.0...11.2

 100H.: (10.8...11.4)

 Dispersion cm3/ : 0.3

 100H.: (0.6)

 2nd speed 1/min: 250.0
 Contr.-rod trav. m: 7.2...7.4
 Del.quantity cm3/ : 1.2...1.6
 100H.: (0.9...1.8)
 Dispersion cm3/ : 0.3
 100H.: (0.5)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
 Notch setting x : 4.25

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 600
 Del.quantity cm3/ : 110.5...112.5
 1000H.: (108.5...114.5)
 Dispersion cm3/ : 3.50
 1000H.: (6.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 46...54

Testing:
 1st c-rod trav.mm : 9.80
 Speed 1/min : 1125...1135
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1175...1205
 3rd c-rod trav.mm : 4.00
 Speed 1/min : 1260...1290
 4th speed 1/min : 1400
 C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 17...25
Setting point w/out aux. spring
Speed 1/min : 250
Contr.-rod trav.mm: 6.8
Speed 1/min : 250
C-rod trav.mm : 7.20...7.40
C-rod trav.mm : 2.00
Speed 1/min : 700...760

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1050
C-rod trav.mm : 10.80...11.00
2nd speed 1/min : 600
C-rod trav.mm : 11.50...11.60
3rd speed 1/min : 825
C-rod trav.mm : 11.20...11.40
4th speed 1/min : 900
C-rod trav.mm : 11.10...11.40

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 1050
Del.quantity cm3/ : 107.0...111.0
1000H.: (104.5...113.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 9.80
Speed 1/min : 1125...1135

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 195.0...235.0
1000H.: (191.0...239.0)
Contr.-rod trav.mm: 19.50...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 7.20...7.40
Del.quantity cm3/ : 12.0...16.0
1000H.: (9.5...18.5)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6K18
Edition : 03.04.87
Superceeded : 12.9.86
Calibrating oil : ISO-4113

Combination no. : 0 401 876 308

Injection pump
Pump designation : PE6P110A32ORS372-1
EP type number : 0 411 816 145
Governor
Governor design. : RSV250...1100PSA508-3
Governor no. : 0 421 833 192

Customer-spec. information
Customer : DAF

Engine : DKTD 1160

1st version kW : 191.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm3/ : 13.7...13.9
100H.: (13.4...14.1)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.6...6.8

Del.quantity cm3/ : 0.7...1.2
100H.: (0.4...1.4)

Dispersion cm3/ : 0.4

100H.: (0.7)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 4.25

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 700

Del.quantity cm3/ : 137.0...139.0
1000H.: (134.5...141.5)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 47...55

Testing:

1st c-rod trav.mm : 11.00

Speed 1/min : 1140...1150

2nd c-rod trav.mm : 4.00

Speed 1/min : 1200...1230

3rd c-rod trav.mm : 4.00

Speed 1/min : 1275...1305

4th speed 1/min : 1425
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 17...25
Setting point w/out aux. spring
Speed 1/min : 250
Contr.-rod trav.mm: 6.2
Speed 1/min : 250
C-rod trav.mm : 6.10...6.30
C-rod trav.mm : 2.00
Speed 1/min : 610...710

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 850
C-rod trav.mm : 12.20...12.30
2nd speed 1/min : 400
C-rod trav.mm : 12.20...12.40
3rd speed 1/min : 300
C-rod trav.mm : 12.50...13.00

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 700
Contr.-rod trav.mm: 12.00...12.10

Measurement

Speed 1/min : 600
1st pressure hPa : -
C-rod trav.mm : 11.40...11.60
2nd pressure hPa : 300
C-rod trav.mm : 11.80...11.90
3rd pressure hPa : 260
C-rod trav.mm : 11.50...11.70

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 600
Del.quantity cm3/ : 128.0...130.0
1000H.: (125.5...132.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 11.00
Speed 1/min : 1140...1150

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 245.0...285.0
1000H.: (241.0...289.0)

Contr.-rod trav.mm: 19.50...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.60...6.80
Del.quantity cm3/ : 7.0...12.0
1000H.: (4.5...14.5)
Dispersion cm3/ : 4.50
1000H.: (7.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6016
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 876 309
Injection pump
Pump designation : PE6P120A32ORS415-1
EP type number : 0 411 826 123
Governor
Governor design. : RSV250...900PSA508
Governor no. : 0 421 833 193

Customer-spec. information
Customer : DAF

Engine : DKS-E1160

1st version kW : 206.0
Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 650

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm³/ : 18.4...18.6

100H.: (18.1...18.9)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.7...6.9

Del.quantity cm³/ : 1.9...2.3

100H.: (1.6...2.6)

Dispersion cm³/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 5.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 650

Charge press. hPa : 700

Del.quantity cm³/ : 184.5...186.5

1000H.: (181.5...189.5)

Dispersion cm³/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 42...50

Testing:

1st c-rod trav.mm : 10.40

Speed 1/min : 940...950

2nd c-rod trav.mm : 4.00

Speed 1/min : 1010...1040

3rd c-rod trav.mm : 4.00

Speed 1/min : 1025...1055

4th speed 1/min : 1200

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 20...28

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.3

Speed 1/min : 250

C-rod trav.mm : 6.20...6.40

C-rod trav.mm : 2.00

Speed 1/min : 395...455

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 650

C-rod trav.mm : 12.10...12.20

2nd speed 1/min : 690

C-rod trav.mm : 11.70...11.90

3rd speed 1/min : 900

C-rod trav.mm : 11.30...11.50

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : 700

Contr.-rod trav.mm: 11.90...12.00

Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 9.80...9.90

2nd pressure hPa : 265

C-rod trav.mm : 11.40...11.50

3rd pressure hPa : 120

C-rod trav.mm : 10.00...10.60

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700

Speed 1/min : 900

Del.quantity cm³/ : 181.5...185.5

1000H.: (178.5...188.5)

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm³/ : 129.5...131.5

1000H.: (126.5...134.5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.40
Speed 1/min : 940...950

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 310.0...350.0
1000H.: (306.0...354.0)
Contr.-rod trav.mm: 19.50...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.70...6.90
Del.quantity cm3/ : 19.0...23.0
1000H.: (16.0...26.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column.

Test sheet : IFS 23,1 A
Edition : 19.12.86
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 876 318
Injection pump
Pump designation : PE6P130A32ORS496
EP type number : 0 411 836 042
Governor
Governor design. : RSV350...1500POA514
Governor no. : 0 421 833 201

Customer-spec. information
Customer : ISOTTA-FRASCHINI

Engine : ID38 SS-6V

1st version kW : 330,0
Speed 1/min: 3000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
Contr.-rod trav.mm: 18.00...21.00
Cam sequence : 1- 2- 3- 4- 5- 6

SD ang. spacing^oCS: 0-45-120-165-240-285
Tolerance + -^o : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1500

Contr.-rod trav.mm: 10.00...10.10

Del.quantity cm³/ : 25.7...26.0

100H.: (25.3...26.3)

Dispersion cm³/ : 0.6

100H.: (1.0)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 4.9...5.1

Del.quantity cm³/ : 2.0...2.6

100H.: (1.6...3.0)

Dispersion cm³/ : 1.0

100H.: (1.4)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 2.25

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1500

Del.quantity cm³/ : 257.0...260.0

1000H.: (253.5...263.5)

Dispersion cm³/ : 6.00

1000H.: (10.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 42...50

Testing:

1st c-rod trav.mm : 9.00

Speed 1/min : 1540...1550

2nd c-rod trav.mm : 4.00

Speed 1/min : 1600...1630

4th speed 1/min : 1700

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 16...24

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 4.5

Speed 1/min : 350

C-rod trav.mm : 4.90...5.10

C-rod trav.mm : 2.00

Speed 1/min : 435...495

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 400

C-rod trav.mm : 11.20...11.80

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9.00

Speed 1/min : 1540...1550

Remarks:

APPLICATION

Navy

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PEN 6,1 Q
Edition : 05.06.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 876 327
Injection pump
Pump designation : PE6P110A32ORS499
EP type number : 0 411 816 169
Governor
Governor design. : RSV325...1400P2A374-
3
Governor no. : 0 421 833 220

Customer-spec. information
Customer : VOLVO-PENTA

Engine : TAMD61A

1st version kW : 220.0
Speed 1/min: 2800

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
: (2.45...2.65)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 10.80...10.90

Del.quantity cm3/ : 11.4...11.6
100H.: (11.1...11.9)

Dispersion cm3/ : 0.4
100H.: (0.7)

2nd speed 1/min: 325.0
Contr.-rod trav. m: 4.1...4.3
Del.quantity cm3/ : 1.1...1.5
Dispersion cm3/ : 0.3
100H.: (0.6)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
Notch setting x : 3.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1000
Charge press. hPa: 900
Del.quantity cm3/ : 114.0...116.0
1000H.: (111.0...119.0)
Dispersion cm3/ : 4.00
1000H.: (7.50)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 47...55

Testing:
1st c-rod trav.mm : 9.80
Speed 1/min : 1420...1430
2nd c-rod trav.mm : 4.00
Speed 1/min : 1455...1485
4th speed 1/min : 1620

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 13...21
Setting point w/out aux. spring
Speed 1/min : 325
Contr.-rod trav.mm: 3.7
Speed 1/min : 325
C-rod trav.mm : 4.10...4.30
C-rod trav.mm : 2.00
Speed 1/min : 380...440

TORQUE CONTROL

Dimension a mm : 1400 1
Torque-control curve - 1st version
1st speed 1/min : 1.10.
C-rod trav.mm : ..11.20 0 0
C-rod trav.mm : .0.00 600 1
3rd speed 1/min : 1.10.
C-rod trav.mm : ..11.40 0 0
C-rod trav.mm : .0.00 375 1
5th speed 1/min : 1.55.
C-rod trav.mm : ..11.65

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 10.80...10.90

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 8.10...8.30
2nd pressure hPa : 550
C-rod trav.mm : 10.50...10.60

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 1400
Del.quantity cm3/ : 116.0...122.0
1000H.: (115.0...125.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 48.0...52.0
1000H.: (45.0...55.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9.80
Speed 1/min : 1420...1430

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 135.0...165.0

LOW IDLE

Speed 1/min : 325
Contr.-rod trav.mm: 4.10...4.30
Del.quantity cm3/ : 11.0...15.0
Dispersion cm3/ : 3.00
1000H.: (6.00)

APPLICATION

Navy

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IFS 23,1 A1
 Edition : 09.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 876 330
 Injection pump
 Pump designation : PE6P130A320S496-1
 EP type number : 0 411 836 043
 Governor
 Governor design. : RSV350...1500POA524
 Governor no. : 0 421 833 256

Customer-spec. information
 Customer : ISOTTA-FRASCHINI

Engine : ID38 SS-6V

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Calibrating nozzle-holder assembly : 1 688 901 019
 Opening pressure, bar : 207...210
 Perforated-plate diameter mm : 0,8
 Test inj. tubing : 1 680 750 067
 Outside diameter x Wall thickness x Length mm : 6,00x1,50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant. per values -----

START OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 3,50...3,60
 : (3,45...3,65)
 Contr.-rod trav.mm: 18,00...21,00

D20

Cam sequence : 1- 2- 3- 4- 5- 6

SD ang. spacing[°]CS: 0-45-120-165-240-285
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1500

 Contr.-rod trav.mm: 10.00...10.10

 Del.quantity cm3/ : 25.7...26.0

 100H.: (25.3...26.3)

 Dispersion cm3/ : 0.6

 100H.: (1.0)

 2nd speed 1/min: 350.0
 Contr.-rod trav. m: 4.9...5.1
 Del.quantity cm3/ : 2.0...2.6
 100H.: (1.6...3.0)
 Dispersion cm3/ : 1.0
 100H.: (1.4)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
 Notch setting x : 2.25

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1500
 Charge press. hPa : 900
 Del.quantity cm3/ : 257.0...260.0
 1000H.: (253.5...263.5)
 Dispersion cm3/ : 6.00
 1000H.: (10.00)

HIGHEST RATED SPEED

1st version
 Control-lever position degrees: 42...50

Testing:

1st c-rod trav.mm : 9.00
 Speed 1/min : 1540...1550
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1600...1630
 4th speed 1/min : 1700

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 16...24

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 4.5

Speed 1/min : 350

C-rod trav.mm : 4.40...4.60

C-rod trav.mm : 2.00

Speed 1/min : 435...495

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1500

C-rod trav.mm : 10.00...10.10

2nd speed 1/min : 600

C-rod trav.mm : 10.00...10.20

3rd speed 1/min : 400

C-rod trav.mm : 11.20...11.80

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : 900

Contr.-rod trav.mm: 10.00...10.20

Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 9.00...9.10

2nd pressure hPa : 300

C-rod trav.mm : 9.30...9.40

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9.00

Speed 1/min : 1540...1550

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 4.90...5.10

Del.quantity cm3/ : 20.0...26.0

1000H.: (16.0...30.0)

Dispersion cm3/ : 10.00

1000H.: (14.00)

Remarks:

APPLICATION

Navy

D21

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 7,1 C 2
Edition : 02.06.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 876 331
Injection pump
Pump designation : PE6P110A32ORS497
EP type number : 0 411 816 165
Governor
Governor design. : RSV200...1200P1A374-
5
Governor no. : 0 421 833 257

Customer-spec. information
Customer : VOLVO

Engine : TD71AW

1st version kW : 150.0
Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness : 6.00X1.50X600
x Length mm

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
: (2.95...3.15)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.70...12.80

Del.quantity cm³/ : 13.3...13.5

100H.: (13.0...13.8)

Dispersion cm³/ : 0.4

100H.: (0.7)

2nd speed 1/min: 200.0

Contr.-rod trav. m: 5.4...5.6

Del.quantity cm³/ : 1.6...2.2

100H.: (-)

Dispersion cm³/ : 0.3

100H.: (0.6)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 5.25

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm³/ : 133.0...135.0

1000H.: (130.0...138.0)

Dispersion cm³/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 63...71

Testing:

1st c-rod trav.mm : 11.70

Speed 1/min : 1210...1220

2nd c-rod trav.mm : 4.00

Speed 1/min : 1260...1290

4th speed 1/min : 1420

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 21...29

Setting point w/out aux. spring

Speed 1/min : 200

Contr.-rod trav.mm: 5.0

Speed 1/min : 200

C-rod trav.mm : 5.40...5.60

C-rod trav.mm : 2.00

Speed 1/min : 280...340

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 12.70...12.80

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 9.60...9.70

2nd pressure hPa : 720

C-rod trav.mm : 12.50...12.60

3rd pressure hPa : 120

C-rod trav.mm : 9.90...10.10

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -

Speed 1/min : 700

Del.quantity cm³/ : 80.0...82.0

1000H.: (77.0...85.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.70

Speed 1/min : 1210...1220

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm³/ : 160.0...190.0

Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 200

Contr.-rod trav.mm: 5.40...5.60

Del.quantity cm³/ : 16.0...22.0

Dispersion cm³/ : 3.00
1000H.: (6.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.

Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,0 R7
Edition : 24.07.87
Superceeded : 1.85
Calibrating oil : ISO-4113
Combination no. : 0 401 876 734
Injection pump
Pump designation : PE6P110A72ORS3040-1
EP type number : 0 411 816 738
Governor
Governor design. : RSV350...1100P1/505
Governor no. : 0 421 833 148

Customer-spec. information
Customer : SCANIA

Engine : DS 11 05

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.30...3.40
 : (3.25...3.45)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-20-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm³/ : 15.6...15.8

100H.: (15.4...16.0)

Dispersion cm³/ : 0.6

100H.: (0.8)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 4.4...4.6

Del.quantity cm³/ : 1.8...2.2

100H.: (-)

Dispersion cm³/ : 0.2

100H.: (0.4)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 6.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1100

Del.quantity cm³/ : 156.0...158.0

1000H.: (154.0...160.0)

Dispersion cm³/ : 6.00

1000H.: (8.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 62...70

Testing:

1st c-rod trav.mm : 12.10

Speed 1/min : 1140...1150

2nd c-rod trav.mm : 4.00

Speed 1/min : 1210...1240

4th speed 1/min : 1370

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever

position degrees: 27...35
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 4.0
Speed 1/min : 350
C-rod trav.mm : 3.90...4.10
C-rod trav.mm : 2.00
Speed 1/min : 440...500

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700
Del.quantity cm³/ : 156.5...161.5
1000H.: (154.0...164.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 12.10
Speed 1/min : 1140...1150

MIDDLE RATED SPEED

Contr.-rod trav.mm: 4.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 4.40...4.60
Del.quantity cm³/ : 18.0...22.0
1000H.: (-)
Dispersion cm³/ : 2.00
1000H.: (4.00)

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
ADDITIONAL INFORMATION

Check and set without ROBO diaphragam

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on 1983-10-05
Start of delivery - engine: 20° before
TDC
Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 12,1 E
 Edition : 09.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 4U1 876 741
 Injection pump
 Pump designation : PE6P120A32ORS3153
 EP type number : 0 411 826 745
 Governor
 Governor design. : RSV200...100OP1A30S-
 3
 Govenner no. : 0 421 833 208

Customer-spec. information
 Customer : VOLVO

Engine : TJD 121 K

1st version kW : 253.0
 Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6,00x1,50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.60...2.70
 : (2.55...2.75)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11.50...11.60

Del.quantity cm³/ : 22.4...22.7

100H.: (22.2...23.0)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 200.0

Contr.-rod trav. m: 5.6...5.8

Del.quantity cm³/ : 2.3...2.9

100H.: (2.0...3.2)

Dispersion cm³/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 6.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm³/ : 224.5...227.5

1000H.: (222.0...230.0)

Dispersion cm³/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 56...64

Testing:

1st c-rod trav.mm : 10.50

Speed 1/min : 1020...1030

2nd c-rod trav.mm : 4.00
Speed 1/min : 1070...1100
4th speed 1/min : 1240
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 23...31
Setting point w/out aux. spring
Speed 1/min : 200
Contr.-rod trav.mm: 5.2
Speed 1/min : 200
C-rod trav.mm : 5.60...5.80
C-rod trav.mm : 2.00
Speed 1/min : 260...320

TORQUE CONTROL

Dimension a mm : 950 1
Torque-control curve - 1st version
1st speed 1/min : 1.50.
C-rod trav.mm : ..11.60 450 1
2nd speed 1/min : 1.50.
C-rod trav.mm : ..11.60 250 1
3rd speed 1/min : 2.70.
C-rod trav.mm : ..13.30 0 0

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 10.50
Speed 1/min : 1020...1030

STARTING FUEL DELIVERY

Speed 1/min : 100

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MTU 47,5 H1
 Edition : 20.10.87
 Superceeded : 9.3.87
 Calibrating oil : ISO-4113
 Combination no. : 0 406 030 004
 Injection pump
 Pump designation : PE12ZWM160/12ORS2012
 EP type number : 0 416 060 003
 Governor
 Governor design. : RQUV300...1050ZWA65R
 Governor no. : 0 422 409 036

Customer-spec. information
 Customer : MTU

Engine : 12 V 396-03

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 40...45
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 026

Opening
 pressure, bar : 220...223

Test inj. tubing : 1 680 750 016

Outside diameter
 x Wall thickness
 x Length mm : 8,00x2,00x1500

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Prestroke mm : 2,50...2,60
 : (2,45...2,65)
 Contr.-rod trav.mm: 12,00
 Cam sequence : 12-9-4-5-8-11-2-3-10
 -7-6-1

SD ang. spacing°CS: 0-15-60-75-120-135-
 180-195-240-255-300-
 315
 Tolerance + - ° : 0.50(0.75)

BASIC SETTING

1st speed 1/mi: 1000

 Contr.-rod trav.mm: 18.00

 Del.quantity cm3/ : 63.0...64.4

 100H.: (62.5...64.9)

 Dispersion cm3/ : 2.0

 100H.: (3.0)

 2nd speed 1/min: 1000
 Contr.-rod trav. m: 9.00
 Del.quantity cm3/ : 21.2...24.0
 100H.: (20.7...24.5)
 Dispersion cm3/ : 2.8
 100H.: (4.2)
 3rd speed 1/min: 350
 Contr.-rod trav.mm: 9.00
 Del.quantity cm3/ : 13.2...15.6
 100H.: (12.7...16.1)
 Dispersion cm3/ : 1.6
 100H.: (2.4)

SLEEVE POSITION

Control-lever position
 Degree: 79...85
 Speed 1/min: 1050
 Cont.-rod travelmm: 18.00

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 79...85

Testing:
 1st c-rod trav.mm : 18.00
 Speed 1/min : 1050
 2nd c-rod trav.mm : 17.00
 Speed 1/min : 1055...1075
 3rd c-rod trav.mm : 4.00
 Speed 1/min : 1150...1210
 4th speed 1/min : 1250
 C-rod trav.mm : 0.00...2.00

SET IDLE CONTROL-LEVER POSITION

Speed 1/min : 300
 Contr.-rod trav.mm: 8.00

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 J 1
Edition : 18.09.87
Superceeded : 21.8.87
Calibrating oil : ISO-4113

Combination no. : 0 402 670 804

Injection pump
Pump designation : PE12P120A320LS7813-1
EP type number : 0 412 620 811
Governor
Governor design. : RSV350...750POA825-S
Governor no. : 0 421 833 277

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 444 LA

1st version kW : 441.0
Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 150...170

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 9,0 E 3
 Edition : 09.03.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 876 748
 Injection pump
 Pump designation : PE6P120A32ORS3141
 EP type number : 0 411 826 744
 Governor
 Governor design. : RSV350...1100P1A519
 Governor no. : 0 421 833 219

Customer-spec. information
 Customer : SAAB-SCANIA

Engine : DN9 01

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 5.00...5.10
 : (4.95...5.15)
 Contr.-rod trav.mm: 9.00...12.00

E01

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

 Contr.-rod trav.mm: 9.30...9.40

 Del.quantity cm3/ : 11.7...11.9

 100H.: (11.4...12.2)

 Dispersion cm3/ : 0.5

 100H.: (0.8)

2nd speed 1/min: 350.0
 Contr.-rod trav. m: 5.0...5.2
 Del.quantity cm3/ : 1.5...1.9
 100H.: (-)
 Dispersion cm3/ : 0.3
 100H.: (0.6)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
 Notch setting x : 6.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 700
 Del.quantity cm3/ : 117.0...119.0
 1000H.: (114.0...122.0)
 Dispersion cm3/ : 5.00
 1000H.: (8.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 60...68

Testing:
 1st c-rod trav.mm : 8.30
 Speed 1/min : 1140...1150
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1175...1205
 4th speed 1/min : 1300
 C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 26...34
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 3.9
Speed 1/min : 350
C-rod trav.mm : 4.30...4.50
C-rod trav.mm : 2.00
Speed 1/min : 435...495

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 8.30
Speed 1/min : 1140...1150

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 290.0...340.0
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 4.30...4.50

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
1987-01-08

E02

Engine start of delivery: 18° BTDC

Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 Q 7
 Edition : 21.08.87
 Superceeded : 12.9.86
 Calibrating oil : ISO-4113

Combination no. : 0 401 876 753

Injection pump
 Pump designation : PE6P120A320LS3815-10
 EP type number : 0 411 826 735
 Governor
 Governor design. : RSV750...1150P1A820-6
 Govenner no. : 0 421 833 227

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM421A

1st version kW : 184.0
 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow quantity min. 1/h: 100...120

Calibrating nozzle-holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Perforated-plate diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing⁰CS: 0-45-120-165-240-285
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 1180

Contr.-rod trav.mm: 10.70...10.80

Del. quantity cm³/ : 15.8...16.0

100H.: (15.5...16.3)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 750.0

Contr.-rod trav. m: 3.4...3.6

Del. quantity cm³/ : 1.8...2.4

100H.: (1.5...2.7)

Dispersion cm³/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1180

Del. quantity cm³/ : 158.0...160.0

1000H.: (155.0...163.0)

Dispersion cm³/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 56...64

Testing:

1st c-rod trav.mm : 9.70

Speed 1/min : 1210...1220

2nd c-rod trav.mm : 4.00
Speed 1/min : 1240...1260
4th speed 1/min : 1350
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 32...40
Setting point w/out aux. spring
Speed 1/min : 750
Contr.-rod trav.mm: 3.4
Speed 1/min : 750
C-rod trav.mm : 3.30...3.50
C-rod trav.mm : 2.00
Speed 1/min : 755...815

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1180
C-rod trav.mm : 10.70...10.80
2nd speed 1/min : 950
C-rod trav.mm : 11.20...11.40
3rd speed 1/min : 1075
C-rod trav.mm : 11.00...11.20

SWITCH-OVER POINT

Speed 1/min : 5 (0)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 975
Del. quantity cm³/ : 169.0...173.0
1000H.: (166.0...176.0)
Dispersion cm³/ : 8.00
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 9.70
Speed 1/min : 1210...1220

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 150.0...170.0
1000H.: (146.0...174.0)

Remarks:

When adjusting and checking, adjust speed regulation to 1210...1220 l/min. Afterwards, readjust speed regulation to 1160...1170 l/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PEN 12,0 H
 Edition : 05.06.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 876 755
 Injection pump
 Pump designation : PE6P120A32ORS3187
 EP type number : 0 411 826 757
 Governor
 Governor design. : RSV250..1100P4A523
 Govenner no. : 0 421 833 272

Customer-spec. information
 Customer : VOLVO-PENTA

Engine : TD120G

1st version kW : 256.0
 Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6,00X1,50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

E05

Prestroke mm : 2.40...2.50
 : (2.35...2.55)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.50...12.60

Del.quantity cm3/ : 21.1...21.4

100H.: (20.8...21.7)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 4.7...4.9

Del.quantity cm3/ : 2.5...2.9

100H.: (2.2...3.2)

Dispersion cm3/ : 0.5

100H.: (0.7)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
 Notch setting x : 5.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm3/ : 211.0...214.0

1000H.: (208.0...217.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 56...64

Testing:

1st c-rod trav.mm : 11.50

Speed 1/min : 1120...1130

2nd c-rod trav.mm : 4.00
Speed 1/min : 1165...1195
4th speed 1/min : 1330
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 21...29
Setting point w/out aux. spring
Speed 1/min : 250
Contr.-rod trav.mm: 4.3
Speed 1/min : 250
C-rod trav.mm : 4.70...4.90
C-rod trav.mm : 2.00
Speed 1/min : 295...355

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 12.50...12.60

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 11.40...11.50
2nd pressure hPa : 570
C-rod trav.mm : 12.30...12.40
3rd pressure hPa : 440
C-rod trav.mm : 11.70...11.90

FUEL-DELIVERY CHARACTERISTICS

Charge press. hPa : -
Speed 1/min : 700
Del.quantity cm3/ : 180.0...183.0
1000H.: (177.0...186.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than
full-load trav.mm: 11.50
Speed 1/min : 1120...1130

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 400.0...430.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250

E06

Contr.-rod trav.mm: 4.70...4.90
Del.quantity cm3/ : 25.0...29.0
1000H.: (22.0...32.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : PEN 12,1 B
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 876 756
Injection pump
Pump designation : PE6P120A32ORS3189
EP type number : 0 411 826 759
Governor
Governor design. : RSV650...750P4/421-3
Governor no. : 0 421 833 252

Customer-spec. information
Customer : VOLVO-PENTA

Engine : TD1216G

1st version kW : 199.0
Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6,00X1,50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2,60...2,70
 : (2,55...2,75)
Contr.-rod trav.mm: 9,00...12,00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0,50 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11,00...11,10

Del.quantity cm3/ : 23,0...23,3

100H.: (22,7...23,6)

Dispersion cm3/ : 0,5

100H.: (0,9)

2nd speed 1/min: 650,0

Contr.-rod trav. m: 3,3...3,5

Del.quantity cm3/ : 2,0...2,4

100H.: (1,7...2,7)

Dispersion cm3/ : 0,5

100H.: (0,7)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0,30...1,70

Governor-spring reload
Notch setting x : 4,75

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 230,0...233,0

1000H.: (227,0...236,0)

Dispersion cm3/ : 5,00

1000H.: (9,00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 42...50

Testing:

1st c-rod trav.mm : 10,00

Speed 1/min : 750...755

2nd c-rod trav.mm : 4,00

Speed 1/min : 791...804
4th speed 1/min : 950
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 35...43
Setting point w/out aux. spring
Speed 1/min : 650
Contr.-rod trav.mm: 3.4
Speed 1/min : 650
C-rod trav.mm : 3.30...3.50
C-rod trav.mm : 2.00
Speed 1/min : 630...690

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.00
Speed 1/min : 750...755

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 40.0...520.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 20,2 K
Edition : 14.08.87
Superceeded : 3.86
Calibrating oil : ISO-4113
Combination no. : 0 401 878 125
Injection pump
Pump designation : PE8P130A620/4LS485
EP type number : 0 411 838 038
Governor
Governor design. : RS250/1000P1A422R
Governor no. : 0 421 821 003

Customer-spec. information
Customer : KHD

Engine : BA8 M816

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 4- 7- 6- 8- 5-
2- 3

SD ang. spacing°CS: 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 750

Contr.-rod trav.mm: 15.00...15.10

Del.quantity cm3/ : 35.8...36.1

100H.: (35.4...36.4)

Dispersion cm3/ : 0.6

100H.: (1.0)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 5.8...6.0
Del.quantity cm3/ : 2.0...2.6
100H.: (1.7...2.9)
Dispersion cm3/ : 1.0
100H.: (1.4)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...0.70

Governor-spring reload
Notch setting x : 5.00

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 54...62

Testing:
1st c-rod trav.mm : 14.00
Speed 1/min : 1040...1050
2nd c-rod trav.mm : 4.00
Speed 1/min : 1105...1135
4th speed 1/min : 1270
C-rod trav.mm : 0.30...1.40

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1000
C-rod trav.mm : 15.00...15.10
2nd speed 1/min : 550
C-rod trav.mm : 15.00...15.20

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 14.00
Speed 1/min : 1040...1050

Remarks:

Test specifications upon request.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 P 1
Edition : 21.08.87
Superceeded : 10.85
Calibrating oil : ISO-4113

Combination no. : 0 401 878 703

Injection pump
Pump designation : PE8P120A320LS3816-10
EP type number : 0 411 828 715
Governor
Governor design. : RSV650...1150POA823
Governor no. : 0 421 833 166

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : 0M422A

1st version kW : 206,0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1180

Contr.-rod trav.mm: 9.30...9.40

Del.quantity cm3/ : 13.7...13.9
 100H.: (13.4...14.2)

Dispersion cm3/ : 0.5
 100H.: (0.9)

2nd speed 1/min: 650.0
Contr.-rod trav. m: 3.4...3.6
Del.quantity cm3/ : 1.6...2.2
 100H.: (1.3...2.5)
Dispersion cm3/ : 0.8
 100H.: (1.2)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1180
Del.quantity cm3/ : 137.0...139.0
 1000H.: (134.0...142.0)
Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 42...50

Testing:
1st c-rod trav.mm : 8.30

Speed 1/min : 1210...1220
2nd c-rod trav.mm : 4.00
Speed 1/min : 1235...1255
4th speed 1/min : 1400
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 20...28
Setting point w/out aux. spring
Speed 1/min : 650
Contr.-rod trav.mm: 3.6
Speed 1/min : 650
C-rod trav.mm : 3.50...3.70
C-rod trav.mm : 2.00
Speed 1/min : 655...695

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1180
C-rod trav.mm : 9.30...9.40
2nd speed 1/min : 975
C-rod trav.mm : 10.10...10.20
3rd speed 1/min : 1075
C-rod trav.mm : 9.60...9.80
4th speed 1/min : 700
C-rod trav.mm : 10.10...10.30

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 950
Del. quantity cm³/ : 154.0...158.0
1000H.: (151.0...161.0)
Dispersion cm³/ : 8.00
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 8.30
Speed 1/min : 1210...1220

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

When adjusting and checking, adjust speed regulation to 1210...1220 l/min. Afterwards, readjust speed regulation to 1160...1170 l/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 S 1
 Edition : 13.05.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 878 704
 Injection pump
 Pump designation : PE8P110A32OLS3802-10
 EP type number : 0 411 818 710
 Governor
 Governor design. : RSV750...1150POA820-
 2
 Governor no. : 0 421 833 170

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM422

1st version kW : 206.0
 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 SD ang. spacing°CS: 270-315
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1100

 Contr.-rod trav.mm: 11.50...11.60

 Del. quantity cm3/ : 13.1...13.3

 100H.: (12.8...13.5)

 Dispersion cm3/ : 0.4

 100H.: (0.8)

2nd speed 1/min: 750.0
 Contr.-rod trav. m: 4.8...5.0
 Del. quantity cm3/ : 1.6...2.2
 100H.: (1.3...2.4)
 Dispersion cm3/ : 0.4
 100H.: (0.7)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1100
 Del. quantity cm3/ : 131.0...133.0
 1000H.: (128.5...135.5)
 Dispersion cm3/ : 4.00
 1000H.: (8.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 40...48

Testing:
 1st c-rod trav.mm : 10.50
 Speed 1/min : 1160...1170
 2nd c-rod trav.mm : 4.00

Speed 1/min : 1190...1210
4th speed 1/min : 1300
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 23...31
Setting point w/out aux. spring
Speed 1/min : 750
Contr.-rod trav.mm: 4.9

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 750
C-rod trav.mm : 4.80...5.00

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.50
Speed 1/min : 1160...1170

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 P 2
 Edition : 09.03.87
 Superceeded : 12.9.86
 Calibrating oil : ISO-4113
 Combination no. : 0 401 878 708
 Injection pump
 Pump designation : PE8P120A32QLS3816-10
 EP type number : 0 411 828 715
 Governor
 Governor design. : RSV450...1150POA823-
 1
 Govenner no. : 0 421 833 243

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM422A

1st version kW : 243.0
 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1130

 Contr.-rod trav.mm: 11.00...11.10

 Del.quantity cm3/ : 15.8...16.0

 100H.: (15.5...16.3)

 Dispersion cm3/ : 0.5

 100H.: (0.9)

2nd speed 1/min: 450.0
 Contr.-rod trav. m: 4.4...5.6
 Del.quantity cm3/ : 1.6...2.2
 100H.: (1.3...2.5)
 Dispersion cm3/ : 0.8
 100H.: (1.2)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1130
 Del.quantity cm3/ : 158.0...160.0
 1000H.: (155.0...163.0)
 Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 38...46

Testing:

1st c-rod trav.mm : 10.00
Speed 1/min : 1160...1170
2nd c-rod trav.mm : 4.00
Speed 1/min : 1185...1205
4th speed 1/min : 1400
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 15...23
Setting point w/out aux. spring
Speed 1/min : 450
Contr.-rod trav.mm: 4.5

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 450
C-rod trav.mm : 4.40...4.70
C-rod trav.mm : 2.00
Speed 1/min : 450...520

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 158.0...162.0
1000H.: (155.0...165.0)
Dispersion cm3/ : 8.00
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.00
Speed 1/min : 1160...1170

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 H
Edition : 26.06.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 878 710
Injection pump
Pump designation : PE8P110A320LS3845
EP type number : 0 411 818 715
Governor
Governor design. : RSV350...750POA824-1
2
Governor no. : 0 421 833 270

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 163,0
Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
SD ang. spacing°CS: 270-315
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.90...14.00

Del.quantity cm3/ : 14.8...15.0
100H.: (14.5...15.2)

Dispersion cm3/ : 0.4
100H.: (0.8)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 7.7...7.9
Del.quantity cm3/ : 1.4...1.8
100H.: (1.1...2.0)
Dispersion cm3/ : 0.4
100H.: (0.7)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...0.80

Governor-spring reload
Notch setting x : 3.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Del.quantity cm3/ : 148.0...150.0
1000H.: (145.5...152.5)
Dispersion cm3/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 76...84

Testing:

1st c-rod trav.mm : 12.90
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 780...793

LOWEST RATED SPEED I

Control-lever
position degrees: 64...72
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 7.1

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 350
C-rod trav.mm : 7.00...7.20

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 150.0...170.0
1000H.: (146.0...174.0)

Remarks:

Observe VDT-I-420/120

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 18,3 I 2
Edition : 13.05.87
Superceeded : 28.10.86
Calibrating oil : ISO-4113
Combination no. : 0 401 879 704
Injection pump
Pump designation : PE10P110A32OLS3818-
11
EP type number : 0 411 819 706
Governor
Governor design. : RSV450...1150POA823-
3
Governor no. : 0 421 833 245

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 423

1st version kW : 261.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

E19

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 10- 9- 4- 1- 8- 7
- 6- 3- 5- 2

SD ang. spacing°CS: 0-45-72-117-144-189-
216-261-288-333
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 10

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 12.6...12.8

100H.: (12.3...13.0)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 450.0

Contr.-rod trav. m: 6.4...6.6

Del.quantity cm3/ : 1.2...2.0

100H.: (0.9...2.2)

Dispersion cm3/ : 0.4

100H.: (0.7)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 3.50

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Del.quantity cm3/ : 126.0...128.0

1000H.: (123.5...130.5)

Dispersion cm3/ : 4.00

1000H.: (8.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 39...47

Testing:

1st c-rod trav.mm : 10.00
Speed 1/min : 1165...1175
2nd c-rod trav.mm : 4.00
Speed 1/min : 1210...1230
4th speed 1/min : 1300
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 450
Contr.-rod trav.mm: 6.5

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 450
C-rod trav.mm : 6.40...6.60
C-rod trav.mm : 2.00
Speed 1/min : 470...530

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 101.0...107.0
1000H.: (98.0...110.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.00
Speed 1/min : 1165...1175

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 18,3 I 3
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 879 705
Injection pump
Pump designation : PE10P110A32OLS3818-1
EP type number : 0 411 819 706
Governor
Governor design. : RSV350...105OPOA824-
Governor no. : 0 421 833 258

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 423

1st version kW : 242.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

E21

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 10- 9- 4- 1- 8- 7
- 6- 3- 5- 2

SD ang. spacing°CS: 0-45-72-117-144-189-
216-261-288-333
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 10

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 11.30...11.40

Del.quantity cm3/ : 11.7...11.9
100H.: (11.4...12.1)

Dispersion cm3/ : 0.4
100H.: (0.8)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 7.6...7.9
Del.quantity cm3/ : 1.2...2.0
100H.: (0.9...2.2)
Dispersion cm3/ : 0.4
100H.: (0.7)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1000
Del.quantity cm3/ : 117.0...119.0
1000H.: (114.5...121.5)
Dispersion cm3/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 36...44

Testing:
1st c-rod trav.mm : 10.30
Speed 1/min : 1065...1070

2nd c-rod trav.mm : 4.00
Speed 1/min : 1100...1113

LOWEST RATED SPEED I

Control-lever
position degrees: 15...23
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 7.7

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 350
C-rod trav.mm : 7.60...7.90
C-rod trav.mm : 2.00

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600
Del.quantity cm3/ : 97.0...101.0
1000H.: (94.0...104.0)
Dispersion cm3/ : 6.00
1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 12.20
Speed 1/min : 1165...1175

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:

Observe VDT-I-420/120

0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : STE 9,7 E
 Edition : 03.04.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 886 701
 Injection pump
 Pump designation : PE6P110A721RS3101
 EP type number : 0 411 816 725
 Governor
 Governor design. : RSV400..1200P1A527
 Governer no. : 0 421 833 259

Customer-spec. information
 Customer : STEYR

Engine : WD615.85/87

1st version kW : 206.0
 Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1200

Contr.-rod trav.mm: 13.00...13.10

Del.quantity cm3/ : 17.2...17.4

100H.: (16.9...17.7)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 400.0

Contr.-rod trav. m: 6.2...6.4

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.4)

Dispersion cm3/ : 0.4

100H.: (0.7)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 4.75

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1200

Charge press. hPa : 1200

Del.quantity cm3/ : 172.0...174.0

1000H.: (169.0...177.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 62...70

Testing:

1st c-rod trav.mm : 12.00

Speed 1/min : 1240...1250

2nd c-rod trav.mm : 4.00

Speed 1/min : 1295...1325

4th speed 1/min : 1460

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 24...32
Setting point w/out aux. spring
Speed 1/min : 400
Contr.-rod trav.mm: 5.8
Speed 1/min : 400
C-rod trav.mm : 6.20...6.40
C-rod trav.mm : 2.00
Speed 1/min : 530...590

TORQUE CONTROL

Dimension a mm : 1200 1
Torque-control curve - 1st version
1st speed 1/min : 3.00.
C-rod trav.mm : ..13.10 700 1
2nd speed 1/min : 3.60.
C-rod trav.mm : ..13.70 0 0
C-rod trav.mm : .0.00 1120 1
4th speed 1/min : 3.20.
C-rod trav.mm : ..13.40 0 0

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 1200
Contr.-rod trav.mm: 13.60...13.70

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 9.80...10.00
2nd pressure hPa : 660
C-rod trav.mm : 12.70...12.80
3rd pressure hPa : 320
C-rod trav.mm : 10.60...10.80

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1200
Speed 1/min : 700
Del. quantity cm3/ : 178.0...184.0
1000H.: (175.0...187.0)
Charge press. hPa : -
Speed 1/min : 700
Del. quantity cm3/ : 104.0...108.0
1000H.: (101.0...111.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12.00
Speed 1/min : 1240...1250

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm3/ : 140.0...170.0
1000H.: (-)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : ALO 13,8 A1
Edition : 7.86
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 046 202
Injection pump
Pump designation : PES6P120A32ORS410
Governor
Governor design. : RQV300...875PA498K

Customer-spec. information
Customer : ALLIS CHALMERS

Engine : 6138 LT

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025
Inlet press., bar : 1.5
Calibrating nozzle-holder
assembly : 0 681 443 022
Opening
pressure, bar : 172...175
Test inj. tubing : 1 680 750 060
Outside diameter
x Wall thickness
x Length mm : 8,00x2,00x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 2,8...2,9
Prestroke mm : 10,5
: 1-5-3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0,5 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 875

Contr.-rod trav.mm: 8,7

Del.quantity cm3/ : 16,1...16,3

Dispersion cm3/ : 0,50

2nd speed 1/min: 300

Contr.-rod trav. m: 5,2

Del.quantity cm3/ : 1,8...2,4

Dispersion cm3/ : 1,0

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 900

Contr.-rod travelmm: 15,2...17,8

Governor-spring reload

Notch setting x : -

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 875

Del.quantity cm3/ : 161,0...163,0

1000H.: (157,0...167,0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 58...66

Testing:

1st c-rod trav.mm : 7,7

Speed 1/min : 915...925

2nd c-rod trav.mm : 4,0

Speed 1/min : 945...975

4th speed 1/min : 900

C-rod trav.mm : 0..1,0

LOWEST RATED SPEED I

Control-lever

position degrees: 8...16

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 5,1...5,3

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7,9

C-rod trav.mm : 2,0

Speed 1/min : 440...500

Speed 1/min : 550

C-rod trav.mm max : 1,0

TORQUE CONTROL

Dimension λ mm : 0,05

Torque-control curve - 1st version

1st speed 1/min : 875

C-rod trav.mm : 8,70

2nd speed 1/min : 600

C-rod trav.mm : 8,75...8,85

SWITCH-OVER POINT

Speed 1/min : 180...240

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 600

Speed 1/min : 144,5

Del.quantity cm3/ : ...148,5 (140,

1000H.: 5...152,5)

ROTATIONAL-SPEED LIMITATION

1st version

Imm control-rod travel less than

full-load trav.mm: 7,7

Speed 1/min : 915...925

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 130,0...170,0

LOW IDLE

Speed 1/min : 300

Del.quantity cm3/ : 18,0...24,0

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : RVI 8,8 D 5
Edition : 12.12.86
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 046 328
Injection pump
Pump designation : PES6P120A32ORS419-2
EP type number : 0 412 026 048
Governor
Governor design. : RQ275/950PA753-1
Governor no. : 0 421 801 377

Customer-spec. information
Customer : RVI

Engine : MIDS/PS062045 FC

1st version kW : 144.0
Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 500

Contr.-rod trav.mm: 8.70...8.80

Del. quantity cm³/ : 11.6...11.8

100H.: (11.3...12.1)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 275.0

Contr.-rod trav. m: 5.1...5.3

Del. quantity cm³/ : 1.7...2.3

100H.: (1.4...2.6)

Dispersion cm³/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position
Degree: -2

Speed 1/min: 525

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 500

Charge press. hPa : 700

Del. quantity cm³/ : 116.0...118.0

1000H.: (113.0...121.0)

Dispersion cm³/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 525

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 7.20

Speed 1/min : 1015...1030

2nd c-rod trav.mm : 4.00

Speed 1/min : 1050...1080

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 275
Contr.-rod trav.mm: 5.2

Testing:

Speed 1/min : 200
C-rod trav.mm min : 5.30
Speed 1/min : 275
C-rod trav.mm : 3.40...3.60
C-rod trav.mm : 2.00
Speed 1/min : 300...340

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 500
C-rod trav.mm : 8.70...8.80
2nd speed 1/min : 950
C-rod trav.mm : 8.00...8.20
3rd speed 1/min : 750
C-rod trav.mm : 8.30...8.50

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 700

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 7.90...8.00
2nd pressure hPa : 245
C-rod trav.mm : 8.50...8.60

SWITCH-OVER POINT

Speed 1/min : 195 (215)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 950
Del.quantity cm³/ : 136.0...140.0
1000H.: (133.0...143.0)

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm³/ : 101.0...104.0
1000H.: (-)

ROTATIONAL-SPEED LIMITATION

1st version

F01

1mm control-rod travel less than

full-load trav.mm: 7.20
Speed 1/min : 1015...1030

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 140.0...160.0
1000H.: (-)

LOW IDLE

Speed 1/min : 275
Contr.-rod trav.mm: 3.40...3.60

Remarks:

Start-of-delivery mark 9.5° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : RVI 8,8 D 6
Edition : 12.12.86
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 046 329
Injection pump
Pump designation : PES6P120A32ORS419-2
EP type number : 0 412 026 048
Governor
Governor design. : RQ275/950PA843
Governor no. : 0 421 801 378

Customer-spec. information
Customer : RVI

Engine : MIDS/PS062045D/A

1st version kW : 129.0
Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 10.00...11.00

BASIC SETTING

1st speed 1/mi: 500

Contr.-rod trav.mm: 8.00...8.10

Del.quantity cm3/ : 10.4...10.6

100H.: (10.1...10.9)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 275.0
Contr.-rod trav. m: 4.8...5.0
Del.quantity cm3/ : 1.7...2.3
100H.: (1.4...2.6)
Dispersion cm3/ : 0.8
100H.: (1.2)

SLEEVE POSITION

Control-lever position
Degree: -2
Speed 1/min: 525
Cont.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 500
Del.quantity cm3/ : 104.0...106.0
1000H.: (101.0...109.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:
Speed 1/min : 525
Contr.-rod trav.mm: 20.0

Testing:
1st c-rod trav.mm : 6.40
Speed 1/min : 1015...1030
2nd c-rod trav.mm : 4.00

Speed 1/min : 1040...1070
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

after start of delivery cyl. 1

LOWEST RATED SPEED I

Control-lever
position degrees: 67...75
Setting point w/out aux. spring
Speed 1/min : 275
Contr.-rod trav.mm: 3.6

Testing:

Speed 1/min : 200
C-rod trav.mm min : 5.20
Speed 1/min : 275
C-rod trav.mm : 3.50...3.70
C-rod trav.mm : 2.00
Speed 1/min : 300...340

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 500
C-rod trav.mm : 8.00...8.10
2nd speed 1/min : 950
C-rod trav.mm : 7.40...7.50
3rd speed 1/min : 750
C-rod trav.mm : 7.60...7.80

SWITCH-OVER POINT

Speed 1/min : 210 (230)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 950
Del. quantity cm³/ : 123.0...127.0
1000H.: (120.0...130.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 6.40
Speed 1/min : 1015...1030

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 140.0...160.0
1000H.: (136.0...164.0)

LOW IDLE

Speed 1/min : 275
Contr.-rod trav.mm: 3.50...3.70

Remarks:

Start-of-delivery mark 9.5° cam angle

F03

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DEE 7,6 L
Edition : 7.86
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 076 026
Injection pump
Pump designation : PES6P110A72ORS305
Governor
Governor design. : RSV400...10SOP2/399D
R

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466 A

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 050
Inlet press., bar : 1,5
Calibrating nozzle-holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175
Test inj. tubing : 1 680 750 015
Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600
(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----
START OF DELIVERY
Test pressure, bar : 2,8...2,9
Date of mfg. : (2,75...2
Prestroke mm : ,95)
: 1-5-3-6-2-4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0,5(0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 11,7

Del.quantity cm³/ : 16,0...16,2

Dispersion cm³/ : 0,40

2nd speed 1/min: 400

Contr.-rod trav. m: 6,0

Del.quantity cm³/ : 1,3...1,9

Dispersion cm³/ : 0,20

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0,3...1,0

Governor-spring reload

Notch setting x : -

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1050

Del.quantity cm³/ : 160,0...162,0

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 40...48

Testing:

1st c-rod trav.mm : 11,7

Speed 1/min : 1050

2nd c-rod trav.mm : 5,1

Speed 1/min : 1155

3rd c-rod trav.mm : 10,7

Speed 1/min : 1085...1100

LOWEST RATED SPEED I

Control-lever

position degrees: 17...25

Setting point w/out aux. spring

Speed 1/min : 400

Contr.-rod trav.mm: 5,5

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19,0

Speed 1/min : 400

C-rod trav.mm : 6,0

TORQUE CONTROL

Dimension a mm : 1050 1

Torque-control curve - 1st version

1st speed 1/min : 1,9

C-rod trav.mm : 650 1

2nd speed 1/min : 2,15.

C-rod trav.mm : ..12,45

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 170

Measurement

Speed 1/min : 500

1st pressure hPa : 710

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 650

Speed 1/min : 170,0

Del.quantity cm³/ : ...173,0

Charge press. hPa : 500

Speed 1/min : 89,0.

Del.quantity cm³/ : ..95,0

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10,7

Speed 1/min : 1085....1100

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm³/ : 140,0...180,0

HIGH IDLE

1st version

Charge press. hPa : 1155

Speed 1/min : 5,1

Contr.-rod trav.mm: 32,5.

Del.quantity cm³/ : ..37,5

LOW IDLE

Speed 1/min : 400

Del.quantity cm³/ : 13,0...19,0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 21,6 A3
Edition : 09.03.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 640 800

Injection pump
Pump designation : PE12P120A520/SRS7116
EP type number : 0 412 620 801
Governor
Governor design. : RQV300...1150PA756
Governor no. : 0 421 813 486

Customer-spec. information
Customer : MWM

Engine : TBD234V12

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 2- 9- 10- 5- 6-
11- 12- 3- 4- 7- 8

SD ang. spacing^oCS: 0-30-60-90-120-150-
180-210-240-270-300-
330

Tolerance + - ^o : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 800

Contr.-rod trav.mm: 14.90...15.00

Del.quantity cm³/ : 26.0...26.2

100H.: (25.8...26.6)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav, m: 6.5...6.7

Del.quantity cm³/ : 3.0...4.0

100H.: (-)

Dispersion cm³/ : 0.6

100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.30...1.40

2nd speed 1/min: 350

Sleeve travel mm: 1.60...2.00

3rd speed 1/min: 560

Sleeve travel mm: 2.50...2.90

4th speed 1/min: 1190

Sleeve travel mm: 8.30...8.40

5th speed 1/min: 1280

Sleeve travel mm: 9.60...9.90

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1200

Contr.-rod travelmm: 15.20...17.80

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 52...60

Testing:

1st c-rod trav.mm : 13.90

Speed 1/min : 1190...1200

2nd c-rod trav.mm : 4.00

Speed 1/min : 1290...1320

4th speed 1/min : 1400

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 14...22

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.00

Speed 1/min : 300

C-rod trav.mm : 6.50...6.70

CONSTANT REGULATION

Speed 1/min : 300...580

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 14.90...15.00

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 9.30...9.50

2nd pressure hPa : 625

C-rod trav.mm : 14.70...14.80

3rd pressure hPa : 250

C-rod trav.mm : 11.30...11.50

SWITCH-OVER POINT

Speed 1/min : 220 (240)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 13.90

Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm³/ : 200.0...240.0

1000H.: (-)

Remarks:

Full-load delivery not known. Set
according to engine test report.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11,0 W
Edition : 09.03.87
Superceeded : 9.84
Calibrating oil : ISO-4113

Combination no. : 0 402 646 812

Injection pump
Pump designation : PE6P120A72ORS7007
EP type number : 0 412 626 803
Governor
Governor design. : RQV200...1000PA539-2
Governor no. : 0 421 813 359

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DSC 11 01

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.50...4.60
 : (4.45...4.65)

Contr.-rod trav.mm: 6.00...8.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 7.00...14.70
& c-rod tray max. : 21.00
Difference^o CS : 1.85...2.55

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 14.70...14.80

Del.quantity cm3/ : 21.0...21.2
100H.: (20.7...21.5)

Dispersion cm3/ : 0.7

100H.: (1.0)

2nd speed 1/min: 225.0

Contr.-rod trav. m: 4.4...4.6

Del.quantity cm3/ : 1.4...1.8
100H.: (-)

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225

Sleeve travel mm: 1.30...1.40

2nd speed 1/min: 340

Sleeve travel mm: 2.30...2.70

3rd speed 1/min: 550

Sleeve travel mm: 3.90...4.20

4th speed 1/min: 1045

Sleeve travel mm: 8.10...8.30

5th speed 1/min: 1170

Sleeve travel mm: 9.70...10.00

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1070

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

F11

Speed 1/min: 700
Charge press. hPa : 900
Del.quantity cm3/ : 210.0...212.0
1000H.: (207.0...215.0)
Dispersion cm3/ : 7.00
1000H.: (10.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 57...65

Testing:

1st c-rod trav.mm : 13.70

Speed 1/min : 1040...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1165...1195

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 5...13

Testing:

Speed 1/min : 100

C-rod trav.mm min : 5.90

Speed 1/min : 225

C-rod trav.mm : 4.40...4.60

C-rod trav.mm : 2.00

Speed 1/min : 310...370

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 14.70...14.80

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 11.80...11.90

2nd pressure hPa : 410

C-rod trav.mm : 14.00...14.10

3rd pressure hPa : 290

C-rod trav.mm : 12.40...12.60

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900

Speed 1/min : 1000

Del.quantity cm3/ : 201.0...209.0

1000H.: (199.0...211.0)

Charge press. hPa : -

Speed 1/min : 500
Del.quantity cm3/ : 164.0...168.0
1000H.: (162.0...170.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 13.70
Speed 1/min : 1040...1050

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...290.0
1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 4.40...4.60
Del.quantity cm3/ : 14.0...18.0
1000H.: (-)
Dispersion cm3/ : 3.00
1000H.: (6.00)

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without ROBO diaphragam

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania
on 1984-12-19
22° before top dead center with
control-rod travel 6.0...8.0 mm.

Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 21,6 B
 Edition : 05.06.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 402 670 803
 Injection pump
 Pump designation : PE12P120A520/SRS7146
 EP type number : 0 412 620 808
 Governor
 Governor design. : RSUV325...1150POA358
 Govenrer no. : 0 421 829 105

Customer-spec. information
 Customer : MWM

Engine : TBD234V12

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Calibrating nozzle-holder assembly : 1 688 901 019
 Opening pressure, bar : 207...210
 Perforated-plate diameter mm : 0,8
 Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 2- 9- 10- 5- 6-
 11- 12- 3- 4- 7- 8

SD ang. spacing°CS: 0-30-60-90-120-150-
 180-210-240-270-300-
 330

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 800

 Contr.-rod trav.mm: 14.90...15.00

 Del.quantity cm3/ : 26.0...26.2

 100H.: (25.8...26.6)

 Dispersion cm3/ : 0.5

 100H.: (0.9)

2nd speed 1/min: 325.0
 Contr.-rod trav. m: 6.0...6.2
 Del.quantity cm3/ : 3.0...4.0
 100H.: (2.7...4.3)
 Dispersion cm3/ : 0.6
 100H.: (1.0)
 3rd speed 1/min: 1100
 Contr.-rod trav.mm: 7.00...7.10
 Del.quantity cm3/ : 1.0...6.0 *
 100H.: (-)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
 Notch setting x : 4.00

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 50...58

Testing:
 1st c-rod trav.mm : 13.90
 Speed 1/min : 1190...1200
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1280...1310
 4th speed 1/min : 1440
 C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
 position degrees: 66...74

Setting point w/out aux. spring
Speed 1/min : 325
Contr.-rod trav.mm: 5.6
Speed 1/min : 325
C-rod trav.mm : 6.00...6.20
C-rod trav.mm : 2.00
Speed 1/min : 420...480

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 14.90...15.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.30...9.50
2nd pressure hPa : 625
C-rod trav.mm : 14.70...14.80
3rd pressure hPa : 250
C-rod trav.mm : 11.30...11.50

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 13.90
Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 200.0...240.0
1000H.: (-)

LOW IDLE

Speed 1/min : 325
Contr.-rod trav.mm: 6.00...6.20
Del.quantity cm3/ : 30.0...40.0
1000H.: (27.0...43.0)
Dispersion cm3/ : 6.00
1000H.: (10.00)

Remarks:

* = Element disconnected at idle for
cylinders 2, 4, 6, 8, 10 and 12.
Latching at 0.75 bar...0.85 bar.

Unlatching at 0.35 bar...0.45 bar.

Full-load delivery not known. Set
according to engine test report.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 10,8 C
 Edition : 05.06.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 402 676 804
 Injection pump
 Pump designation : PE6P120A520/SRS7142
 EP type number : 0 412 626 820
 Governor
 Governor design. : RSUV325...1150POA358
 Governer no. : 0 421 829 105

Customer-spec. information
 Customer : MWM

Engine : D-TBD234V6

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Perforated-plate diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant. per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 5,20...5,30
 : (5,15...5,35)
 Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 2- 9- 10- 5- 6-
 11- 12- 3- 4- 7- 8

SD ang. spacing°CS: 0-30-60-90-120-150-
 180-210-240-270-300-
 330

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 800

Contr.-rod trav.mm: 14.90...15.00

Del.quantity cm3/ : 26.0...26.2

100H.: (25.8...26.6)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 325.0

Contr.-rod trav. m: 6.0...6.2

Del.quantity cm3/ : 3.0...4.0

100H.: (2.7...4.3)

Dispersion cm3/ : 0.6

100H.: (1.0)

3rd speed 1/min: 1100

Contr.-rod trav.mm: 7.00...7.10

Del.quantity cm3/ : 1.0...6.0 *

100H.: (-)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
 Notch setting x : 4.00

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 50...58

Testing:
 1st c-rod trav.mm : 13.90
 Speed 1/min : 1190...1200
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1280...1310
 4th speed 1/min : 1440
 C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I
 Control-lever
 position degrees: 66...74

Setting point w/out aux. spring
Speed 1/min : 325
Contr.-rod trav.mm: 5.6
Speed 1/min : 325
C-rod trav.mm : 6.00...6.20
C-rod trav.mm : 2.00
Speed 1/min : 420...480

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 14.90...15.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.30...9.50
2nd pressure hPa : 625
C-rod trav.mm : 14.70...14.80
3rd pressure hPa : 250
C-rod trav.mm : 11.30...11.50

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 13.90
Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 200.0...240.0
1000H.: (-)

LOW IDLE

Speed 1/min : 325
Contr.-rod trav.mm: 6.00...6.20
Del.quantity cm3/ : 30.0...40.0
1000H.: (27.0...43.0)
Dispersion cm3/ : 6.00
1000H.: (10.00)

Remarks:

* = Element disconnected at idle for
cylinders 2, 4, 6, 8, 10 and 12.
Latching at 0.75 bar...0.85 bar.

Unlatching at 0.35 bar...0.45 bar.

Full-load delivery not known. Set
according to engine test report.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 G
Edition : 1.9.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 678 802
Injection pump
Pump designation : PE8P120A32OLS7801-1
EP type number : 0 412 628 818
Governor
Governor design. : RSV650...1050POA826
Governor no. : 0 421 833 253

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442A

1st version kW : 234,0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6,00X1,50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1080

Contr.-rod trav.mm: 11.60...11.70

Del.quantity cm³/ : 16.3...16.5

100H.: (16.0...16.8)

Dispersion cm³/ : 0,5

100H.: (0,9)

2nd speed 1/min: 650,0

Contr.-rod trav. m: 4.1...4.3

Del.quantity cm³/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm³/ : 0,8

100H.: (1,2)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1080

Del.quantity cm³/ : 163,0...165,0

1000H.: (160,0...168,0)

Dispersion cm³/ : 5,00

1000H.: (9,00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 34...42

Testing:

1st c-rod trav.mm : 10.60

Speed 1/min : 1110...1120
2nd c-rod trav.mm : 4.00
Speed 1/min : 1135...1150
4th speed 1/min : 1400
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 650
Contr.-rod trav.mm: 4.2

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 650
C-rod trav.mm : 4.20
C-rod trav.mm : 2.00
Speed 1/min : 650...710

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1080
C-rod trav.mm : 11.60...11.70
2nd speed 1/min : 900
C-rod trav.mm : 13.20...13.40
3rd speed 1/min : 1000
C-rod trav.mm : 12.40...12.60

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 900
Del.quantity cm3/ : 202.0...206.0
1000H.: (199.0...209.0)
Dispersion cm3/ : 8.0
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.60
Speed 1/min : 1110...1120

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 200.0...220.0
1000H.: (196.0...224.0)

Remarks:

In order to adjust and test the EP combination, set full-load speed regul. at 1110...1120 1/min. Then set speed regul. to 1060...1070 1/min again.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 14,4 C
 Edition : 05.06.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 402 678 805
 Injection pump
 Pump designation : PE8P120A520/SRS7143
 EP type number : 0 412 628 820
 Governor
 Governor design. : RSUV325...1150POA358
 Governor no. : 0 421 829 105

Customer-spec. information
 Customer : MWM

Engine : TBD234V8

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Calibrating nozzle-holder assembly : 1 688 901 019
 Opening pressure, bar : 207...210
 Perforated-plate diameter mm : 0,8
 Test inj. tubing : 1 680 750 067
 Outside diameter x Wall thickness x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant. per values -----

START OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 8- 5- 4- 7- 2-
 : 3- 6

SD ang. spacing°CS: 0-30-90-120-180-210-
 270-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 800

 Contr.-rod trav.mm: 14.90...15.00

 Del.quantity cm3/ : 26.0...26.2

 100H.: (25.7...26.5)

 Dispersion cm3/ : 0.5

 100H.: (0.9)

2nd speed 1/min: 325.0
 Contr.-rod trav. m: 6.0...6.2
 Del.quantity cm3/ : 3.0...4.0
 100H.: (2.7...4.3)
 Dispersion cm3/ : 0.6
 100H.: (1.0)
 3rd speed 1/min: 1100
 Contr.-rod trav.mm: 6.90...7.10
 Del.quantity cm3/ : 1.0...6.0 *
 100H.: (-)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Contr.-rod travelmm: 0.30...0.70

Governor-spring reload
 Notch setting x : 4.00

HIGHEST RATED SPEED

1st version
 Control-lever position degrees: 50...58

Testing:

1st c-rod trav.mm : 13.90
 Speed 1/min : 1190...1200
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1280...1310
 4th speed 1/min : 1440
 C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever position degrees: 16...24
 Setting point w/out aux. spring

Speed 1/min : 325
Contr.-rod trav.mm: 5.6
Speed 1/min : 325
C-rod trav.mm : 6.00...6.20
C-rod trav.mm : 2.00
Speed 1/min : 420...480

Unlatching at 0.25 bar...0.35 bar.

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 14.90...15.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.30...9.50
2nd pressure hPa : 625
C-rod trav.mm : 14.70...14.80
3rd pressure hPa : 250
C-rod trav.mm : 11.30...11.50

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 13.90
Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 200.0...240.0
1000H.: (196.0...244.0)

LOW IDLE

Speed 1/min : 325
Contr.-rod trav.mm: 6.00...6.20
Del.quantity cm3/ : 30.0...40.0
1000H.: (27.0...43.0)
Dispersion cm3/ : 6.00
1000H.: (10.00)

Remarks:

* = Element disconnected at idle for
cylinders 2, 4, 6 and 8
Hydraulic latching of starting
delivery.

Latching at 0.75 bar...0.85 bar.

F20

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 28,8 D
 Edition : 05.06.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 402 678 806
 Injection pump
 Pump designation : PE8P120A520/SRS7145
 EP type number : 0 412 628 820
 Governor
 Governor design. : RSUV325...1150POA358
 Governer no. : 0 421 829 105

Customer-spec. information
 Customer : MWM

Engine : TBD234V16

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Contr.-rod trav.mm: 9.00...12.00

F21

Cam sequence : 1- 2- 3- 4- 7- 8-
 5- 6

SD ang. spacing°CS: 0-30-90-120-225-255-
 315-345
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 800

 Contr.-rod trav.mm: 14.90...15.00

 Del.quantity cm3/ : 26.0...26.2

 100H.: (25.7...26.5)

 Dispersion cm3/ : 0.5

 100H.: (0.9)

2nd speed 1/min: 325.0
 Contr.-rod trav. m: 6.0...6.2
 Del.quantity cm3/ : 3.0...4.0
 100H.: (2.7...4.3)
 Dispersion cm3/ : 0.6
 100H.: (1.0)
 3rd speed 1/min: 1100
 Contr.-rod trav.mm: 6.90...7.10
 Del.quantity cm3/ : 1.0...6.0 *
 100H.: (-)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
 Notch setting x : 4.00

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 50...58

Testing:

1st c-rod trav.mm : 13.90
 Speed 1/min : 1190...1200
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1280...1310
 4th speed 1/min : 1440
 C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
 position degrees: 16...24
 Setting point w/out aux. spring

Speed 1/min : 325
Contr.-rod trav.mm: 5.6
Speed 1/min : 325
C-rod trav.mm : 6.00...6.20
C-rod trav.mm : 2.00
Speed 1/min : 420...480

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 14.90...15.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.30...9.50
2nd pressure hPa : 625
C-rod trav.mm : 14.70...14.80
3rd pressure hPa : 250
C-rod trav.mm : 11.30...11.50

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 13.90
Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 200.0...240.0
1000H.: (196.0...244.0)

LOW IDLE

Speed 1/min : 325
Contr.-rod trav.mm: 6.00...6.20
Del.quantity cm3/ : 30.0...40.0
1000H.: (27.0...43.0)
Dispersion cm3/ : 6.00
1000H.: (10.00)

Remarks:

* = Element disconnected at idle for
cylinders 2, 4, 6 and 8
Hydraulic latching of starting
delivery.

Latching at 0.75 bar...0.85 bar.

F22

Unlatching at 0.25 bar...0.35 bar.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 30
 Edition : 24.07.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 403 446 145
 Injection pump
 Pump designation : PES6MW100/72ORS1114-
 1
 EP type number : 0 413 406 111
 Governor
 Governor design. : RQV300...1300MW48
 Govenner no. : 0 420 083 066

Customer-spec. information
 Customer : MBB

Engine : OM 366 A
 1st version kW : 125.0
 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.50
 Calibrating nozzle-holder
 assembly : 0 681 434 009
 Opening
 pressure, bar : 172...175
 Test inj. tubing : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 30...32
 Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4
 SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

 Contr.-rod trav.mm: 11.00...11.10

 Del.quantity cm3/ : 7.7...7.9

 100H.: (7.5...8.1)

 Dispersion cm3/ : 0.3

 100H.: (0.6)

 2nd speed 1/min: 300.0
 Contr.-rod trav. m: 7.8...7.9
 Del.quantity cm3/ : 0.9...1.3
 100H.: (0.8...1.4)
 Dispersion cm3/ : 0.3
 100H.: (0.5)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1340
 Sleeve travel mm: 8.50...8.70
 2nd speed 1/min: 1450
 Sleeve travel mm: 9.30...9.70
 3rd speed 1/min: 500
 Sleeve travel mm: 2.70...3.30
 4th speed 1/min: 300
 Sleeve travel mm: 1.20...1.70

SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed 1/min: 1330
 Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1300
 Del.quantity cm3/ : 77.0...79.0
 1000H.: (75.0...81.0)
 Dispersion cm3/ : 3.50
 1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 48...56

Testing:

1st c-rod trav.mm : 10.00
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1430...1460
4th speed 1/min : 1520
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 14...22
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 7.8

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.40
Speed 1/min : 300
C-rod trav.mm : 7.80...7.90
C-rod trav.mm : 2.00
Speed 1/min : 500...560

CONSTANT REGULATION

Speed 1/min : 330...600

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1300
C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 700
C-rod trav.mm : 12.10...12.20
3rd speed 1/min : 720
C-rod trav.mm : 12.10...12.20
4th speed 1/min : 800
C-rod trav.mm : 11.80...12.00
5th speed 1/min : 900
C-rod trav.mm : 11.40...11.70

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700
Del.quantity cm3/ : 75.5...78.5
1000H.: (73.0...79.0)
Dispersion cm3/ : 5.00
1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.00
Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 72.0...80.0
1000H.: (69.0...83.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 7.80...7.90
Del.quantity cm3/ : 9.0...13.0
1000H.: (8.0...14.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 17
Edition : 24.07.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 403 446 150
Injection pump
Pump designation : PES6MW100/72ORS1120
EP type number : 0 413 406 112
Governor
Governor design. : RQV300...1300MW59
Governor no. : 0 420 083 077

Customer-spec. information
Customer : MBB

Engine : OM 366 LA

1st version kW : 141.7
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
: (3.45...3.65)

Contr.-rod trav. mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm³/ : 8.65...8.85

100H.: (8.45...90.5)

Dispersion cm³/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 6.1...6.2
Del.quantity cm³/ : 1.05...1.45
100H.: (0.8...1.6)
Dispersion cm³/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1340
Sleeve travel mm: 8.50...8.60
2nd speed 1/min: 800
Sleeve travel mm: 4.40...4.80
3rd speed 1/min: 500
Sleeve travel mm: 2.70...3.30
4th speed 1/min: 300
Sleeve travel mm: 1.20...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1340
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1300
Charge press. hPa : 700
Del.quantity cm³/ : 86.5...88.5
1000H.: (84.5...90.5)
Dispersion cm³/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 48...56

Testing:

1st c-rod trav.mm : 11.10
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1450...1480
4th speed 1/min : 1530
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 16...24
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.1

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.00
Speed 1/min : 300
C-rod trav.mm : 6.10...6.20

CONSTANT REGULATION

Speed 1/min : 320...550
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 260
Contr.-rod trav.mm: 11.00...11.10

Measurement

Speed 1/min : 500
1st pressure hPa : 700
C-rod trav.mm : 12.00...12.10
2nd pressure hPa : -
C-rod trav.mm : 10.80...10.90
3rd pressure hPa : 310
C-rod trav.mm : 11.80...12.10

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 750
Del.quantity cm³/ : 74.5...78.5
1000H.: (72.0...80.0)
Dispersion cm³/ : 5.00
1000H.: (7.00)

Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm3/ : 47.0...49.0
1000H.: (45.0...51.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.10
Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm3/ : 85.0...95.0
1000H.: (82.0...98.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 6.10...6.20
Del. quantity cm3/ : 10.5...14.5
1000H.: (8.0...16.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 20
Edition : 24.07.87
Superceeded : 10.04.87
Calibrating oil : ISO-4113

Combination no. : 0 403 446 177

Injection pump
Pump designation : PES6MW100/72ORS1139
EP type number : 0 413 406 134
Governor
Governor design. : RQV300...1300MW48
Governor no. : 0 420 083 066

Customer-spec. information
Customer : MBB

Engine : OM366A

1st version kW : 125.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm³/ : 8.2...8.4

100H.: (8.0...8.6)

Dispersion cm³/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.8...7.9
Del.quantity cm³/ : 1.0...1.4
100H.: (0.9...1.5)
Dispersion cm³/ : 0.3
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1340
Sleeve travel mm: 8.50...8.70
2nd speed 1/min: 1450
Sleeve travel mm: 9.30...9.70
3rd speed 1/min: 500
Sleeve travel mm: 2.70...3.30
4th speed 1/min: 300
Sleeve travel mm: 1.20...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1350
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1300
Del.quantity cm³/ : 82.0...84.0
1000H.: (80.0...86.0)
Dispersion cm³/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 50...58

Testing:

1st c-rod trav.mm : 10.00
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1425...1455
4th speed 1/min : 1550
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 7.8

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.70
Speed 1/min : 300
C-rod trav.mm : 7.80...7.90

CONSTANT REGULATION

Speed 1/min : 330...500

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1300
C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 800
C-rod trav.mm : 11.80...12.00
3rd speed 1/min : 585
C-rod trav.mm : 12.00...12.20
4th speed 1/min : 1100
C-rod trav.mm : 11.00...11.10

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800
Del.quantity cm³/ : 81.0...83.0
1000H.: (79.0...85.0)
Dispersion cm³/ : 5.00
1000H.: (7.00)
Speed 1/min : 585
Del.quantity cm³/ : 77.5...80.5
1000H.: (75.0...83.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 10.00
Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 7.80...7.90
Del.quantity cm3/ : 10.0...14.0
1000H.: (9.0...15.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 28
Edition : 10.04.87
Superceeded :
Calibrating oil : ISO-4113

Combination no. : 0 403 446 188

Injection pump
Pump designation : PES6MW100/72ORS1144
EP type number : 0 413 406 138
Governor
Governor design. : RQV300...1300MW48-4
Governor no. : 0 420 083 126

Customer-spec. information
Customer : DB

Engine : OM366A

1st version kW : 100.0
Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Contr.-rod trav. mm: 19.00...21.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 10.10...10.20

Del.quantity cm³/ : 6.8...7.0

100H.: (6.6...7.2)

Dispersion cm³/ : 0.35

100H.: (0.6)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.3...7.4
Del.quantity cm³/ : 1.0...1.4
100H.: (0.9...1.5)
Dispersion cm³/ : 0.35
100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1340
Sleeve travel mm: 8.50...8.70
2nd speed 1/min: 1450
Sleeve travel mm: 9.30...9.70
3rd speed 1/min: 500
Sleeve travel mm: 2.70...3.30
4th speed 1/min: 300
Sleeve travel mm: 1.20...1.70

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1350
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1300
Del.quantity cm³/ : 68.0...70.0
1000H.: (66.0...72.0)
Dispersion cm³/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 50...58

Testing:

1st c-rod trav.mm : 9.10
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1390...1420
4th speed 1/min : 1550
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 7.35

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.30
Speed 1/min : 300
C-rod trav.mm : 7.30...7.40

CONSTANT REGULATION

Speed 1/min : 330...500

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1300
C-rod trav.mm : 10.10...10.20
2nd speed 1/min : 750
C-rod trav.mm : 11.10...11.20
3rd speed 1/min : 600
C-rod trav.mm : 11.10...11.20
4th speed 1/min : 900
C-rod trav.mm : 10.70...10.90

SWITCH-OVER POINT

Speed 1/min : 230 (250)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 750
Del.quantity cm³/ : 69.5...72.5
1000H.: (67.0...75.0)
Dispersion cm³/ : 5.00
1000H.: (7.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 9.10
Speed 1/min : 1340...1350

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 80.0...90.0
1000H.: (77.0...93.0)
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 7.30...7.40
Del.quantity cm3/ : 10.0...14.0
1000H.: (9.0...15.0)
Dispersion cm3/ : 3.50
1000H.: (5.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 5,9 G
Edition : 5.3.87
Superceeded : -
Calibrating oil : ISO 4113

Combination no. : 9 400 085 285

Injection pump
Pump designation : PES6A90D320S2727
EP type number : 9 400 084 007
Governor
Governor design. : RSV350...1250A0B1108
Governor no. : 9 420 083 223

Customer-spec. information
Customer : MWM

Engine : D229-6

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 046

Inlet press., bar : 1.0

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar : 25...27

Prestroke mm : 2.70...2.80
 : (2.65...2.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5-3-6-2-4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 9.00...12.00
& c-rod tray max. : 21.00
Difference^o CS : 3...4

BASIC SETTING

1st speed 1/mi: 1200

Contr.-rod trav.mm: 9.10...9.20

Del.quantity cm3/ : 62.5...63.5

100H.: (60.5...65.5)

Dispersion cm3/ : 3.0

100H.: (5.0)

2nd speed 1/min: 350
Contr.-rod trav. m: 5.90...6.10
Del.quantity cm3/ : 1.1...1.5
100H.: (0.9...1.7)
Dispersion cm3/ : 0.25
100H.: (0.45)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...1.00
Governor-spring reload
Notch setting x : 4.0

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1200
Del.quantity cm3/ : 62.5...63.4
1000H.: (60.5...65.5)
Dispersion cm3/ : 3.0
1000H.: (5.0)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 50...58

Testing:
1st c-rod trav.mm : 8.10
Speed 1/min : 1240...1250
2nd c-rod trav.mm : 4.00

Speed 1/min : 1300...1330
4th speed 1/min : 1450
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 25...33
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 5.50

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 350
C-rod trav.mm : 5.90...6.10
C-rod trav.mm : 2.00
Speed 1/min : 510...570

TORQUE CONTROL

Dimension a mm : 1200 9
Torque-control curve - 1st version
1st speed 1/min : .10..
C-rod trav.mm : .9.20 500 9
2nd speed 1/min : .60..
C-rod trav.mm : .9.70 800 9
3rd speed 1/min : .30..
C-rod trav.mm : .9.60

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 500
Speed 1/min : 52.0.
Del.quantity cm3/ : ..54.0 (49.5)
1000H.: ...56.5)
Charge press. hPa : 800
Speed 1/min : 59.5.
Del.quantity cm3/ : ..61.5 57.0.
1000H.: ..64.0

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DEE 6,6 D
 Edition : 17.8.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 9 400 230 006
 Injection pump
 Pump designation : PES6A95D41ORS2559
 Governor
 Governor design. : RSV400...1200A2B2043
 DL

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6404 T

TEST BENCH REQUIREMENTS

Calibrating-pil
 inlet temp. °C : 40...45
 Overflow valve : 1 423 385 007

Inlet press., bar : 1.5

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6,35x2,00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar : 1,85...1,95
 Date of mfg. : (1,80...2
 Prestroke mm : ,00) 10,50
 : 1-5-3-6-2-4

SD ang. spacing^oCS: 0-60-120-180-240-300
 Tolerance + - : 0,50 (0,75)

BASIC SETTING

1st speed 1/mi: 1200

 Contr.-rod trav.mm: 8,80

 Del.quantity cm3/ : 8,4...8,6

 100H.: (-)

 Dispersion cm3/ : 0,3

 100H.: (-)

 2nd speed 1/min: 400
 Contr.-rod trav. m: 5,20
 Del.quantity cm3/ : 1,1...1,5
 100H.: (-)
 Dispersion cm3/ : 0,3
 100H.: (-)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0,30...0,70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1200
 Del.quantity cm3/ : 84,0...86,0
 1000H.: (81,0...89,0)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 44...52

Testing:

1st c-rod trav.mm : 7,80
 Speed 1/min : 1245...1255
 2nd c-rod trav.mm : 4,00
 Speed 1/min : 1290...1320
 4th speed 1/min : 1400
 C-rod trav.mm : 0,30...1,70

LOWEST RATED SPEED I

Control-lever
 position degrees: 18...26
 Setting point w/out aux. spring
 Speed 1/min : 400
 Contr.-rod trav.mm: 4,70

Testing:

Speed 1/min : 100
 C-rod trav.mm min : 19,00

Speed 1/min : 400
C-rod trav.mm : 5,10...5,30
C-rod trav.mm : 2,00
Speed 1/min : 585...645

TORQUE CONTROL

Dimension a mm : 1200 8
Torque-control curve - 1st version
1st speed 1/min : 80
C-rod trav.mm : 800 9
2nd speed 1/min : 30,0
C-rod trav.mm : 9,50

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 800
Speed 1/min : 88,0
Del.quantity cm³/ : ..92,0 (86,0
1000H.: ...94,0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 7,80
Speed 1/min : 1245...1255

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 160,0...180,0
1000H.: (-)
Contr.-rod trav.mm: 21,00

HIGH IDLE

1st version
Charge press. hPa : 1295
Speed 1/min : 4,50
Contr.-rod trav.mm: 21,8.
Del.quantity cm³/ : ..31,8 (-)

LOW IDLE

Speed 1/min : 400
Del.quantity cm³/ : 11,0...15,0
1000H.: (-)

Remarks:

Start-of-delivery mark at 14° angular displacement of the cam after start of delivery of cylinder 1 with control-rod travel = 10,50 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DEE 7.6 J 3
Edition : 26.2.87
Superceeded :
Calibrating oil : ISO-4113
Combination no. : 9 400 230 011
Injection pump
Pump designation : PES6A95D41ORS2561
Governor
Governor design. : RSV600...1100A2B
2048L

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466 TH 01

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 680 750 008
Inlet press., bar : 1.5
Calibrating nozzle-holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar : 1.85...1.95
Date of mfg. : (1.80...2
Prestroke mm : .00) 10.50
: 1-5-3-6-2-4

SD ang. spacing°CS : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

G11

1st speed 1/mi: 1100

Contr.-rod trav.mm: 10.15...10.25

Del.quantity cm3/ : 9.55...9.75

100H.: (-)

Dispersion cm3/ : 0.3

100H.: (-)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1100
Del.quantity cm3/ : 95.5...97.5
1000H.: (93.5...99.5)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 41...49

Testing:

1st c-rod trav.mm : 9.20
Speed 1/min : 1145...1150
2nd c-rod trav.mm : 4.0
Speed 1/min : 1215...4.0
3rd c-rod trav.mm : 0.30...1.70
Speed 1/min : 1300

LOWEST RATED SPEED I

Control-lever
position degrees: 24...32
Setting point w/out aux. spring
Speed 1/min : 600
Contr.-rod trav.mm: 4.80

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.0
C-rod trav.mm : 2.0
Speed 1/min : 730...790
Speed 1/min : 850
C-rod trav.mm max : 1.0

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 9.20
Speed 1/min : 1145...1155

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 170.0...200
1000H.: (-)

HIGH IDLE

1st version
Charge press. hPa : 1200
Contr.-rod trav.mm: 19.0.
Del.quantity cm3/ : ..29.0 (-)

LOW IDLE

Speed 1/min : 600
Del.quantity cm3/ : 12.0...16.0

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 9.0 F 4
Edition : 11.3.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 9 400 230 017
Injection pump
Pump designation : PES8A75D32OR2463
Governor
Governor design. : RQV300...1500AB1060
DR

Customer-spec. information
Customer : IHC

Engine : DV 550 C

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 019
Inlet press., bar : 2.4
Calibrating nozzle-holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175

Test inj. tubing : 9 681 230 702
Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar : 1.95...2.00*
Date of mfg. : (1.90...1
Prestroke mm : .95) 10.70
Contr.-rod trav.mm : 3.95...4.0**(
Date of mfg. : 3.90...4.05
: 1-8-7-3-6-5-
Contr.-rod trav.mm : 4-2

SD ang. spacing°CS: 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50(0.75)

BASIC SETTING

1st speed 1/mi: 1500

Contr.-rod trav.mm: 9.30...9.40

Del.quantity cm3/ : 4.9...5.1

100H.: (-)

2nd speed 1/min: 300
Contr.-rod trav. m: 6.00
Del.quantity cm3/ : 1.7...2.1**
100H.: (-)

SLEEVE POSITION

Control-lever position
Degree: 65...71
Speed 1/min: 1600
Cont.-rod travelmm: 15.00...18.50

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1500
Del.quantity cm3/ : 49.0...51.0
1000H.: (-)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 64...72

Testing:

1st c-rod trav.mm : 9...14
Speed 1/min : 1700
3rd c-rod trav.mm : 3.00...9.50
Speed 1/min : 1800
4th speed 1/min : 2000
C-rod trav.mm : 0...0.10

LOWEST RATED SPEED I

Control-lever
position degrees: 6...14

Testing:

Speed 1/min : 200
C-rod trav.mm min : 8.20
Speed 1/min : 300
C-rod trav.mm : 5.40...7.30
C-rod trav.mm : 3.05
Speed 1/min : 450
Speed 1/min : 600
C-rod trav.mm max : 2.60

Speed 1/min : 870
C-rod trav.mm : 0.10

TORQUE CONTROL

Dimension a mm : 1500 9
Torque-control curve - 1st version
1st speed 1/min : .35
C-rod trav.mm : 1000 9
2nd speed 1/min : .80..
C-rod trav.mm : .10.00 700 9
3rd speed 1/min : .80..
C-rod trav.mm : .10.00

SWITCH-OVER POINT

Speed 1/min : 150...230

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1000
Speed 1/min : 46.0.
Del.quantity cm3/ : ..49.0 (-)
Charge press. hPa : 300
Speed 1/min : 1.0..
Del.quantity cm3/ : .15.0* (-)
Charge press. hPa : 300
Speed 1/min : 36.0.
Del.quantity cm3/ : ..46.0** (-)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 8.35
Speed 1/min : 1605...1615

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 112.0...135.0
1000H.: (-)

LOW IDLE

Speed 1/min : 300
Del.quantity cm3/ : 17.0...21.0
1000H.: (-)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DEE 10,1 A5
Edition : 9.87
Superceeded : 4.3.87
Calibrating oil : ISO-4113
Combination no. : 9 400 231 006
Injection pump
Pump designation : PES6P110A72ORS370
Governor
Governor design. : RSV400...1050PO/450
DR
Cust. part no. : AR 88761

Customer-spec. information
Customer : JOHN DEERE

Engine : 6619 A

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42
Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Calibrating nozzle-holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness x Length mm : 6,00X1,50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant. per values -----

START OF DELIVERY

Prestroke mm : 2.75...2.85
: (2.70...2.90)
Contr.-rod trav.mm: 12.20
Cam sequence : 1-5-3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - ° : 0.5 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 12.20

Del.quantity cm3/ : 17.2...17.4

100H.: (16.9...17.7)

Dispersion cm3/ : 0.4

100H.: (-)

2nd speed 1/min: 400
Contr.-rod trav. m: 6.40
Del.quantity cm3/ : 1.9...2.5
100H.: (-)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...1.40

Governor-spring reload
Notch setting x : ?

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1050
Charge press. hPa : 1200
Del.quantity cm3/ : 172.0...174.0
1000H.: (169.0...177.0)
Dispersion cm3/ : 4.0
1000H.: (-)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 36...44

Testing:
1st c-rod trav.mm : 11.20
Speed 1/min : 1100
2nd c-rod trav.mm : 6.20
Speed 1/min : 1150

LOWEST RATED SPEED I

Control-lever
position degrees: 15...23
Setting point w/out aux. spring
Speed 1/min : 400

Contr.-rod trav.mm: 6.40

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 400
C-rod trav.mm : 6.30...6.50
C-rod trav.mm : 2.00
Speed 1/min : 520...580

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1050
C-rod trav.mm : 12.20
2nd speed 1/min : 650
C-rod trav.mm : 12.60

compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 800
Pressure hPa : 530
Contr.-rod trav.mm: 11.65...11.75

Measurement

Speed 1/min : 800
1st pressure hPa : 270
C-rod trav.mm : 9.60...10.00

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1200
Speed 1/min : 650
Del.quantity cm3/ : 177.4...180.4
1000H.: (174.4...183.4)
Charge press. hPa : -
Speed 1/min : 550
Del.quantity cm3/ : 84.0...92.0
1000H.: (81.0...95.0)

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 170.0
1000H.: (-)

HIGH IDLE

Speed 1/min : 1150
Del.quantity cm3/ : 47.0...57.0
1000H.: (-)

LOW IDLE

Speed 1/min : 400

G16

Del.quantity cm3/ : 19.0...25.0
1000H.: (-)

Remarks:

: JOHN DEERE NO.
: AR 88761

Start-of-delivery mark is at 15°
angular displacement of the cam after
start of delivery at cylinder 1 with
control-rod travel 9.00...12.00 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 L 3
Edition : 28.08.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 846 832
Injection pump
Pump designation : PE6P120A32OLS3815-12
EP type number : 0 411 826 770
Governor
Governor design. : RQ300/1050PA840-1
Governor no. : 0 421 801 418

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 441 A

1st version kW : 191.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
 : (3.55...3.75)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 13.10...13.30

Del.quantity cm3/ : 19.0...19.2

100H.: (18.7...19.5)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 5.4...5.6

Del.quantity cm3/ : 1.4...2.2

100H.: (1.1...2.5)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: 108

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 600

Charge press. hPa : 700

Del.quantity cm3/ : 190.0...192.0

1000H.: (187.0...195.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 11.40

Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1200...1230
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 5.5

Testing:

Speed 1/min : 100
C-rod trav.mm min : 6.90
Speed 1/min : 300
C-rod trav.mm : 5.40...5.60
C-rod trav.mm : 2.00
Speed 1/min : 340...380

TORQUE CONTROL

Dimension a mm : 0.90
2nd speed 1/min : 1050
C-rod trav.mm : 12.30...12.50
3rd speed 1/min : 700
C-rod trav.mm : 13.50...13.70

compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 700
Contr.-rod trav.mm: 13.10...13.30

Measurement

Speed 1/min : 600
1st pressure hPa : 350
C-rod trav.mm : 11.20...11.40
2nd pressure hPa : 550
C-rod trav.mm : 12.40...12.60
3rd pressure hPa : 780
C-rod trav.mm : 13.20...13.40
4th pressure hPa : 1100
C-rod trav.mm : 13.45...13.55

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1100
Speed 1/min : 1050
Del.quantity cm3/ : 184.0...187.0
1000H.: (181.0...190.0)

Dispersion cm3/ : 8.00
1000H.: (12.0)
Charge press. hPa : 1100
Speed 1/min : 700
Del.quantity cm3/ : 204.0...208.0
1000H.: (201.0...211.0)
Dispersion cm3/ : 8.00
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 129.0...131.0
1000H.: (126.0...134.0)
Dispersion cm3/ : 8.00
1000H.: (-)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 11.40
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 190.0...210.0
1000H.: (186.0...214.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 3,0 B 1
Edition : 18.09.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 400 463 146
Injection pump
Pump designation : PES3A75D410/3RS1324
EP type number : 0 410 473 977
Governor
Governor design. : RSV325...900A7C602-1
L
Governor no. : 0 420 232 388
Customer-spec. information
Customer : KHD
Engine : F3L912

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 000
Inlet press., bar : 1.00
Calibrating nozzle-holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175
Test inj. tubing : 1 680 750 014
Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600
(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27
Prestroke mm : 1.90...2.00
: (1.85...2.05)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 3- 2

SD ang. spacing^oCS: 0-120-240
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.90...13.00

Del.quantity cm³/ : 5.2...5.3
100H.: (5.1...5.5)

Dispersion cm³/ : 0.2
100H.: (0.4)

2nd speed 1/min: 325.0
Contr.-rod trav. m: 8.6...8.8
Del.quantity cm³/ : 0.8...1.4
100H.: (0.6...1.5)
Dispersion cm³/ : 0.2
100H.: (0.3)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...1.00

Governor-spring reload
Notch setting x : 5.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Del.quantity cm³/ : 52.5...53.5
1000H.: (51.0...55.0)
Dispersion cm³/ : 2.50
1000H.: (4.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 50...58

Testing:
1st c-rod trav.mm : 11.40
Speed 1/min : 940...950
2nd c-rod trav.mm : 4.00
Speed 1/min : 955...985
3rd c-rod trav.mm : 4.00
Speed 1/min : 1005...1035
4th speed 1/min : 1100

G20

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min : 325
Contr.-rod trav.mm: 8.2
Speed 1/min : 325
C-rod trav.mm : 8.60...8.80
C-rod trav.mm : 2.00
Speed 1/min : 525...585

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 700
C-rod trav.mm : 12.90...13.00
2nd speed 1/min : 500
C-rod trav.mm : 12.90...13.00
3rd speed 1/min : 850
C-rod trav.mm : 12.50...12.80
4th speed 1/min : 900
C-rod trav.mm : 12.40...12.60
5th speed 1/min : 900
C-rod trav.mm : 12.00...12.10

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 11.40
Speed 1/min : 940...950

STARTING FUEL DELIVERY

Speed 1/min : 100

Remarks: :

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 1 G 27
Edition : 09.10.87
Superceeded : 20.6.87
Calibrating oil : ISO-4113
Combination no. : 0 400 463 153
Injection pump
Pump designation : PES3A80D410/3RS1350
EP type number : 0 410 483 023
Governor
Governor design. : RSV325...1250A2C2168
-3L
Governor no. : 0 420 232 475

Customer-spec. information
Customer : KHD

Engine : F3L912

1st version kW : 40.0
Speed 1/min: 2500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
: (1.85...2.05)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 3- 2

SD ang. spacing°CS: 0-120-240
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1250

Contr.-rod trav.mm: 10.10...10.20

Del.quantity cm3/ : 5.7...5.8
100H.: (5.6...6.0)

Dispersion cm3/ : 0.2
100H.: (0.3)

2nd speed 1/min: 325.0

Contr.-rod trav. m: 6.8...7.0
Del.quantity cm3/ : 1.0...1.6
100H.: (0.8...1.7)

Dispersion cm3/ : 0.2
100H.: (0.3)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
Notch setting x : 3.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1250
Del.quantity cm3/ : 57.5...58.5
1000H.: (56.0...60.0)
Dispersion cm3/ : 2.50
1000H.: (3.50)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 41...49

Testing:

1st c-rod trav.mm : 9.10
Speed 1/min : 1290...1300
2nd c-rod trav.mm : 4.00
Speed 1/min : 1315...1345

3rd c-rod trav.mm : 4.00
Speed 1/min : 1330...1360
4th speed 1/min : 1500
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 12...20
Setting point w/out aux. spring
Speed 1/min : 325
Contr.-rod trav.mm: 5.5

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 325
C-rod trav.mm : 5.90...6.10
C-rod trav.mm : 2.00
Speed 1/min : 455...515

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1250
C-rod trav.mm : 10.10...-10.20
2nd speed 1/min : 500
C-rod trav.mm : 10.90...11.00
4th speed 1/min : 1025
C-rod trav.mm : 10.50...10.70

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 800
Del. quantity cm³/ : 54.0...56.0
1000H.: (52.0...58.0)
Dispersion cm³/ : 2.00

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than
full-load trav.mm: 9.10
Speed 1/min : 1290...1300

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 130.0...140.0
1000H.: (127.0...143.0)
Contr.-rod trav.mm: 19.50...21.00

Remarks:

: DX 3.30 V/F

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 1 G 29
Edition : 18.09.87
Superceeded : 9.3.87
Calibrating oil : ISO-4113

Combination no. : 0 400 463 154

Injection pump
Pump designation : PES3A80D410/3RS1350
EP type number : 0 410 483 023
Governor
Governor design. : RSV325...1175ABC2223
-L
Governor no. : 0 420 232 482

Customer-spec. information
Customer : KHD

Engine : F3L912

1st version kW : 33.0
Speed 1/min: 2350

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness : 6.00x2.00x600
x Length mm

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
: (1.85...2.05)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 3- 2

SD ang. spacing^oCS: 0-120-240
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 800

Contr.-rod trav.mm: 10.20...10.50

Del.quantity cm3/ : 4.8...4.9

100H.: (4.6...5.0)

Dispersion cm3/ : 0.2

100H.: (0.4)

2nd speed 1/min: 325.0

Contr.-rod trav. m: 6.2...6.4

Del.quantity cm3/ : 1.0...1.6

100H.: (0.8...1.7)

Dispersion cm3/ : 0.2

100H.: (0.3)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.70

Governor-spring reload

Notch setting x : 5.50

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 800

Del.quantity cm3/ : 48.0...49.0

1000H.: (46.5...50.5)

Dispersion cm3/ : 2.50

1000H.: (4.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 54...62

Testing:

1st c-rod trav.mm : 8.10

Speed 1/min : 1215...1225

2nd c-rod trav.mm : 4.00

Speed 1/min : 1240...1270

3rd c-rod trav.mm : 4.00

Speed 1/min : 1245...1275

4th speed 1/min : 1420

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 19...27

Setting point w/out aux. spring

Speed 1/min : 325

Contr.-rod trav.mm: 5.8

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19.50

Speed 1/min : 325

C-rod trav.mm : 6.20...6.40

C-rod trav.mm : 2.00

Speed 1/min : 460...520

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 800

C-rod trav.mm : 8.80...8.90

2nd speed 1/min : 500

C-rod trav.mm : 10.60...10.70

3rd speed 1/min : 800

C-rod trav.mm : 10.20...10.50

4th speed 1/min : 1175

C-rod trav.mm : 9.10...9.40

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 1175

Del.quantity cm3/ : 46.0...50.0

1000H.: (44.0...52.0)

Speed 1/min : 800

Del.quantity cm3/ : 45.0...47.0

1000H.: (43.0...49.0)

Dispersion cm3/ : 2.5

1000H.: (4.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 8.10

Speed 1/min : 1215...1225

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 100.0...110.0

1000H.: (97.0...113.0)

Contr.-rod trav.mm: 17.00...17.30

Remarks:

: RENAULT

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 8,3 K
Edition : 18.09.87
Superceeded : 12.9.86
Calibrating oil : ISO-4113

Combination no. : 0 400 646 252

Injection pump
Pump designation : PE6A95D410RS2525
EP type number : 0 410 696 987
Governor
Governor design. : RQ225/1200AB1007L
Governor no. : 0 420 200 060

Customer-spec. information
Customer : DAF

Engine : DHR/DHTD 825

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)

Contr.-rod trav.mm: 7.50...10.50

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50

& c-rod trav max. : 21.00

Difference ° CS : 3.00...4.00

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 12.60...12.70

Del.quantity cm³/ : 10.9...11.0

100H.: (10.7...11.2)

Dispersion cm³/ : 0.3

100H.: (0.6)

2nd speed 1/min: 225.0

Contr.-rod trav. m: 5.7...5.9

Del.quantity cm³/ : 0.7...1.2

100H.: (0.4...1.4)

Dispersion cm³/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -2

Speed 17min: 650

Contr.-rod travelmm: 16.80...18.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1000

Charge press. hPa : 700

Del.quantity cm³/ : 109.0...110.0

1000H.: (107.0...112.0)

Dispersion cm³/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Setting point:

Speed 1/min : 650

Contr.-rod trav.mm: 17.6

Testing:

1st c-rod trav.mm : 11.60

Speed 1/min : 1230...1245

2nd c-rod trav.mm : 4.00
Speed 1/min : 1315...1345
4th speed 1/min : 1390
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 225
Contr.-rod trav.mm: 5.8

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.20
Speed 1/min : 225
C-rod trav.mm : 5.70...5.90
C-rod trav.mm : 2.00
Speed 1/min : 340...380
Speed 1/min : 450
C-rod trav.mm max : 1.00

TORQUE CONTROL

Dimension a mm : -
Torque-control curve - 1st version
1st speed 1/min : 1000
C-rod trav.mm : 12.60...12.70
2nd speed 1/min : 1200
C-rod trav.mm : 12.50...12.70

Adjustment test, manifold-pressure compensator (LDA, ADA, ALDA)

1st version

Setting
Speed 1/min : 1000
Pressure hPa : 700
Contr.-rod trav.mm: 12.60...12.70

Measurement

Speed 1/min : 1000
1st pressure hPa : 300
C-rod trav.mm : 12.30...12.40
2nd pressure hPa : 260
C-rod trav.mm : 11.70...12.00
3rd pressure hPa : -
C-rod trav.mm : 11.50...11.60

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -
Speed 1/min : 600
Del.quantity cm3/ : 85.5...86.5
1000H.: (83.5...88.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.60
Speed 1/min : 1230...1245

MIDDLE RATED SPEED

Speed 1/min : 0...0 100

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...140.0
1000H.: (127.0...143.0)
Contr.-rod trav.mm: 19.50...21.00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 5.70...5.90
Del.quantity cm3/ : 7.0...12.0
1000H.: (4.5...14.5)
Dispersion cm3/ : 3.5
1000H.: (5.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 8,7 C 5
Edition : 09.10.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 400 646 270
Injection pump
Pump designation : PE6A90D410RS2124X
EP type number : 0 410 696 155
Governor
Governor design. : RQ375/1275AB658-1DL
Governor no. : 0 420 202 296

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 360

1st version kW : 110.0
Speed 1/min: 2550

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25
: (2.10...2.30)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1250

Contr.-rod trav.mm: 9.30...9.40

Del.quantity cm³/ : 6.9...7.0

100H.: (6.7...7.2)

Dispersion cm³/ : 0.3

100H.: (0.4)

2nd speed 1/min: 375.0

Contr.-rod trav. m: 7.4...7.6

Del.quantity cm³/ : 1.0...1.6

100H.: (-)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 700

Contr.-rod travelmm: 15.60...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1250

Del.quantity cm³/ : 69.5...70.5

1000H.: (67.5...72.5)

Dispersion cm³/ : 3.00

1000H.: (4.50)

HIGHEST RATED SPEED

1st version

Setting point:

Speed 1/min : 700

Contr.-rod trav.mm: 16.0

Testing:

1st c-rod trav.mm : 8.30

Speed 1/min : 1290...1300

2nd c-rod trav.mm : 4.00

Speed 1/min : 1345...1375

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 375

H02

Contr.-rod trav.mm: 7.5

Testing:

Speed 1/min : 100

C-rod trav.mm min : 9.00

Speed 1/min : 375

C-rod trav.mm : 7.40...7.60

C-rod trav.mm : 2.00

Speed 1/min : 465...505

Speed 1/min : 550

C-rod trav.mm max : 1.00

TORQUE CONTROL

Dimension a mm : ?

Torque-control curve - 1st version

1st speed 1/min : 1250

C-rod trav.mm : 9.30...9.40

2nd speed 1/min : 700

C-rod trav.mm : 10.10...10.20

3rd speed 1/min : 895

C-rod trav.mm : 9.80...10.00

4th speed 1/min : 1075

C-rod trav.mm : 9.40...9.70

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 600

Del.quantity cm³/ : 64.5...67.5

1000H.: (62.0...70.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 8.30

Speed 1/min : 1290...1300

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm³/ : 58.0...68.0

1000H.: (55.0...71.0)

Contr.-rod trav.mm: 10.20...10.60

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 9,6 I 2
 Edition : 18.09.87
 Superceeded : 24.7.87
 Calibrating oil : ISO-4113

Combination no. : 0 400 646 275

Injection pump
 Pump designation : PE6A95D410LS2621
 EP type number : 0 410 696 982
 Governor
 Governor design. : RQ300/1250AB1148-1L
 Governer no. : 0 420 200 104

Customer-spec. information
 Customer : KHD

Engine : F6L413F

1st version kW : 141.0
 Speed 1/min: 2500

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Contr.-rod trav.mm: 9.00...12.00

H04

Cam sequence : 1- 6- 5- 4- 3- 2

SD ang. spacing⁰CS: 0-75-120-195-240-315
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1250

Contr.-rod trav.mm: 10.40...10.50

Del.quantity cm³/ : 9.2...9.4

100H.: (9.0...9.6)

Dispersion cm³/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.4...6.6

Del.quantity cm³/ : 0.8...1.4

100H.: (0.5...1.6)

Dispersion cm³/ : 0.3

100H.: (0.5)

SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Contr.-rod travelmm: 16.80...18.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1250

Del.quantity cm³/ : 92.0...94.0

1000H.: (90.0...96.0)

Dispersion cm³/ : 3.50

1000H.: (6.00)

HIGHEST RATED SPEED

1st version

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 17.6

Testing:

1st c-rod trav.mm : 9.40

Speed 1/min : 1295...1310

2nd c-rod trav.mm : 4.00

Speed 1/min : 1325...1355

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 6.5

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.90
Speed 1/min : 300
C-rod trav.mm : 6.40...6.60
C-rod trav.mm : 2.00
Speed 1/min : 340...380

TORQUE CONTROL

Dimension a mm : 0.17
Torque-control curve - 1st version
1st speed 1/min : 1250
C-rod trav.mm : 10.40...10.50
2nd speed 1/min : 600
C-rod trav.mm : 10.90...11.00
3rd speed 1/min : 915
C-rod trav.mm : 10.70...10.90
4th speed 1/min : 980
C-rod trav.mm : 10.40...10.60

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 650
Del.quantity cm3/ : 91.5...94.5
1000H.: (89.0...97.0)

SETTING CONTROL-ROD STOP

Speed 1/min : 650

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9.40
Speed 1/min : 1295...1310

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 120.0...130.0
1000H.: (117.0...133.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 12,7 P2
Edition : 18.09.87
Superceeded : 12.9.86
Calibrating oil : ISO-4113
Combination no. : 0 400 648 141
Injection pump
Pump designation : PE8A95D41OLS2608
EP type number : 0 410 698 988
Governor
Governor design. : RQV300...1250AB1195L
Governor no. : 0 420 212 172

Customer-spec. information
Customer : KHD

Engine : F8L413F

1st version kW : 188.0
Speed 1/min: 2500

TEST BENCH REQUIREMENTS

Calibrating-pil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 8- 7- 2- 6- 5-
 4- 3

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1250

Contr.-rod trav.mm: 10.40...10.50

Del.quantity cm3/ : 9.2...9.4

100H.: (9.0...9.6)

Dispersion cm3/ : 0.3

100H.: (0.6)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.5...6.7

Del.quantity cm3/ : 0.8...1.4

100H.: (0.5...1.6)

Dispersion cm3/ : 0.3

100H.: (0.5)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.20...1.30

2nd speed 1/min: 500

Sleeve travel mm: 2.80...3.00

3rd speed 1/min: 1000

Sleeve travel mm: 6.50...6.70

4th speed 1/min: 1290

Sleeve travel mm: 8.60...8.80

5th speed 1/min: 1375

Sleeve travel mm: 9.40...9.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1275

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1250

Del.quantity cm3/ : 92.0...94.0

1000H.: (90.0...96.0)

Dispersion cm³/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 47...55

Testing:
1st c-rod trav.mm : 9.40
Speed 1/min : 1290...1300
2nd c-rod trav.mm : 4.50
Speed 1/min : 1360...1390
4th speed 1/min : 1500
C-rod trav.mm : 0.30...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 14...22

Testing:
Speed 1/min : 100
C-rod trav.mm min : 8.00
Speed 1/min : 300
C-rod trav.mm : 6.50...6.70

CONSTANT REGULATION

Speed 1/min : 375...485

TORQUE CONTROL

Dimension a mm : 0.50
Torque-control curve - 1st version
1st speed 1/min : 1250
C-rod trav.mm : 10.40...10.50
2nd speed 1/min : 500
C-rod trav.mm : 10.90...11.00
3rd speed 1/min : 850
C-rod trav.mm : 10.70...10.90
4th speed 1/min : 950
C-rod trav.mm : 10.50...10.70

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version
Speed 1/min : 650
Del.quantity cm³/ : 90.5...93.5
1000H.: (88.0...96.0)

ROTATIONAL-SPEED LIMITATION

1st version

H07

1mm control-rod travel less than

full-load trav.mm: 9.40
Speed 1/min : 1290...1300

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 120.0...130.0
1000H.: (117.0...133.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 A 7
Edition : 18.09.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 400 844 087
Injection pump
Pump designation : PES4A90D410RS2666
EP type number : 0 410 894 029
Governor
Governor design. : RQV300...1400AB1065-
SL
Governor no. : 0 420 212 169
Customer-spec. information
Customer : DAIMLER-BENZ
Engine : OM364

1st version kW : 66.0
Speed 1/min: 2800

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 000
Inlet press., bar : 1.00
Calibrating nozzle-holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175
Test inj. tubing : 1 680 750 015
Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600
(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27
Prestroke mm : 2.25...2.35
: (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 3- 4- 2

SD ang. spacing^oCS: 0-90-180-270
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 10.90...11.00

Del.quantity cm³/ : 6.3...6.4

100H.: (6.1...6.6)

Dispersion cm³/ : 0.3

100H.: (0.5)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.6...8.8

Del.quantity cm³/ : 0.8...1.2

100H.: (0.6...1.4)

Dispersion cm³/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 0.80...1.30

2nd speed 1/min: 500

Sleeve travel mm: 2.30...2.80

3rd speed 1/min: 750

Sleeve travel mm: 4.10...4.30

4th speed 1/min: 1500

Sleeve travel mm: 8.50...8.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1420

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1400

Del.quantity cm³/ : 63.0...64.0

1000H.: (61.0...66.0)

Dispersion cm³/ : 3.00

1000H.: (5.00)

HIGHEST RATED SPEED

1st version

H09

Control-lever
position degrees: 58...66

Testing:

1st c-rod trav.mm : 9.90

Speed 1/min : 1450...1460

2nd c-rod trav.mm : 4.00

Speed 1/min : 1560...1590

4th speed 1/min : 1630

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 20...28

Testing:

Speed 1/min : 100

C-rod trav.mm min : 10.20

Speed 1/min : 300

C-rod trav.mm : 8.60...8.80

CONSTANT REGULATION

Speed 1/min : 540...680

TORQUE CONTROL

Dimension a mm : 1.00

Torque-control curve - 1st version

1st speed 1/min : 1400

C-rod trav.mm : 10.90...11.00

2nd speed 1/min : 630

C-rod trav.mm : 12.20...12.30

3rd speed 1/min : 900

C-rod trav.mm : 11.60...11.80

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 630

Del.quantity cm³/ : 55.5...58.5

1000H.: (53.0...61.0)

Speed 1/min : 900

Del.quantity cm³/ : 54.5...57.5

1000H.: (52.0...60.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9.90

Speed 1/min : 1450...1460

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 78.0...88.0
1000H.: (75.0...91.0)
Contr.-rod trav.mm: 17.00...17.40

Remarks:

:

Set shutoff stop to contact at
3.0...3.5 mm control-rod travel.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 A 2
Edition : 16.10.87
Superceeded : 12.9.86
Calibrating oil : ISO-4113
Combination no. : 0 400 844 088
Injection pump
Pump designation : PES4A90D41ORS2666
EP type number : 0 410 894 029
Governor
Governor design. : RQV300...1400AB1065-10L
Governor no. : 0 420 212 203

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM364

1st version kW : 66.0
Speed 1/min: 1400

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp, °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
: (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 3- 4- 2

SD ang. spacing^oCS: 0-90-180-270
Tolerance + -^o : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 10.90...11.00

Del.quantity cm3/ : 6.3...6.4

100H.: (6.1...6.6)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 8.6...8.8
Del.quantity cm3/ : 0.8...1.2
100H.: (0.6...1.4)
Dispersion cm3/ : 0.2
100H.: (0.4)

(B) Setting of injection pump with externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 0.80...1.30
2nd speed 1/min: 500
Sleeve travel mm: 2.30...2.80
3rd speed 1/min: 750
Sleeve travel mm: 4.10...4.30
4th speed 1/min: 1500
Sleeve travel mm: 8.50...8.60

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1420
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1400
Del.quantity cm3/ : 63.5...64.5
1000H.: (61.5...66.5)
Dispersion cm3/ : 3.00
1000H.: (4.50)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 57...65

Testing:
1st c-rod trav.mm : 9.90
Speed 1/min : 1440...1450
2nd c-rod trav.mm : 4.00
Speed 1/min : 1545...1575
4th speed 1/min : 1630
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I
Control-lever
position degrees: 20...28

Testing:
Speed 1/min : 100
C-rod trav.mm min : 10.20
Speed 1/min : 300
C-rod trav.mm : 8.60...8.80

CONSTANT REGULATION
Speed 1/min : 540...680

TORQUE CONTROL
Dimension a mm : 1.00
Torque-control curve - 1st version
1st speed 1/min : 1400
C-rod trav.mm : 10.90...11.00
2nd speed 1/min : 500
C-rod trav.mm : 11.90...12.00
3rd speed 1/min : 700
C-rod trav.mm : 11.50...11.80
4th speed 1/min : 900
C-rod trav.mm : 11.30...11.50

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version
Speed 1/min : 500
Del.quantity cm3/ : 50.0...53.0
1000H.: (47.5...55.5)
1000H.: (5.)
Speed 1/min : 900
Del.quantity cm3/ : 52.5...55.5
1000H.: (50.0...58.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 9.90
Speed 1/min : 1440...1450

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 78.0...88.0
1000H.: (75.0...91.0)
Contr.-rod trav.mm: 16.60...17.00

Remarks:

:
Set shutoff stop to contact at
3.0...3.5 mm control-rod travel.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 V 10
 Edition : 18.09.87
 Superceeded : 8.82
 Calibrating oil : ISO-4113
 Combination no. : 0 400 846 493
 Injection pump
 Pump designation : PES6A90D41ORS2596
 EP type number : 0 410 896 073
 Governor
 Governor design. : RGV300...1400AB1120-1L
 Governer no. : 0 420 212 157
 Customer-spec. information
 Customer : DAIMLER-BENZ
 Engine : OM352A
 1st version kW : 124.0
 Speed 1/min: 2800

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.00
 Calibrating nozzle-holder assembly : 0 681 343 009
 Opening pressure, bar : 172...175
 Test inj. tubing : 1 680 750 014
 Outside diameter x Wall thickness x Length mm : 6.00X2.00X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant. per values -----

START OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1400

 Contr.-rod trav.mm: 11.90...12.00

 Del.quantity cm3/ : 7.3...7.4

 100H.: (7.1...7.6)

 Dispersion cm3/ : 0.3

 100H.: (0.4)

 2nd speed 1/min: 300.0
 Contr.-rod trav. m: 8.5...8.7
 Del.quantity cm3/ : 0.9...1.5
 100H.: (0.7...1.7)
 Dispersion cm3/ : 0.2
 100H.: (0.4)

SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed 1/min: 1500
 Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1400
 Charge press. hPa : 700
 Del.quantity cm3/ : 73.5...74.5
 1000H.: (71.5...76.5)
 Dispersion cm3/ : 3.00
 1000H.: (4.50)

HIGHEST RATED SPEED

1st version
 Control-lever position degrees: 59...67

Testing:

1st c-rod trav.mm : 10.90
 Speed 1/min : 1440...1450
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1570...1600
 4th speed 1/min : 1750
 C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 22...30

Testing:

Speed 1/min : 100
C-rod trav.mm min : 10.10
Speed 1/min : 300
C-rod trav.mm : 8.50...8.70

CONSTANT REGULATION

Speed 1/min : 590...660

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1400
C-rod trav.mm : 11.90...12.00
2nd speed 1/min : 500
C-rod trav.mm : 13.00...13.10
3rd speed 1/min : 1000
C-rod trav.mm : 12.70...12.90
4th speed 1/min : 1200
C-rod trav.mm : 12.10...12.40

Adjustment test, manifold-pressure
compensator (LDA, ADA, ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 700
Contr.-rod trav.mm: 13.00...13.10

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 11.90...12.00
2nd pressure hPa : 320
C-rod trav.mm : 12.70...12.80
3rd pressure hPa : 200
C-rod trav.mm : 12.20...12.40

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 500
Del.quantity cm3/ : 67.5...69.5
1000H.: (65.5...71.5)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 56.0...58.0
1000H.: (54.0...60.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than
full-load trav.mm: 10.90
Speed 1/min : 1440...1450

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 71.0...81.0
1000H.: (68.0...84.0)
Contr.-rod trav.mm: 14.90...15.30

Remarks:

:

Set shutoff stop to contact at
3.0...3.5 mm control-rod travel.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 11,4 B2
 Edition : 18.09.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 400 846 507
 Injection pump
 Pump designation : PES6A95D41OLS2639
 EP type number : 0 410 896 925
 Governor
 Governor design. : RQ250...1100AB1137-6
 L
 Govenner no. : 0 420 200 088
 Cust. part no. : MAN-NR. 2-7413

Customer-spec. information
 Customer : MAN

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.00
 Calibrating nozzle-holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test inj. tubing : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 1.70...1.80
 : (1.65...1.85)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 700

 Contr.-rod trav.mm: 13.40...13.50

 Del.quantity cm3/ : 12.6...12.8

 100H.: (12.4...13.0)

 Dispersion cm3/ : 0.3

 100H.: (0.6)

 2nd speed 1/min: 250.0
 Contr.-rod trav. m: 7.0...7.2
 Del.quantity cm3/ : 0.9...1.5
 100H.: (0.6...1.7)
 Dispersion cm3/ : 0.3
 100H.: (0.5)

SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed 1/min: 600
 Contr.-rod travelmm: 15.60...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 700
 Del.quantity cm3/ : 126.0...128.0
 1000H.: (124.0...130.0)
 Dispersion cm3/ : 3.00
 1000H.: (6.00)

HIGHEST RATED SPEED

1st version
 Setting point:
 Speed 1/min : 600
 Contr.-rod trav.mm: 16.0

Testing:
 1st c-rod trav.mm : 11.50
 Speed 1/min : 1145...1160
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1245...1275

LOWEST RATED SPEED I

Setting point w/out aux. spring
 Speed 1/min : 250

Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.50
Speed 1/min : 250
C-rod trav.mm : 5.90...6.10
C-rod trav.mm : 2.00
Speed 1/min : 385...425
Speed 1/min : 450
C-rod trav.mm max : 1.00

TORQUE CONTROL

Dimension a mm : 0.40
Torque-control curve - 1st version
1st speed 1/min : 1100
C-rod trav.mm : 12.50...12.60
2nd speed 1/min : 600
C-rod trav.mm : 13.40...13.50
3rd speed 1/min : 860
C-rod trav.mm : 13.10...13.30
4th speed 1/min : 910
C-rod trav.mm : 12.60...12.90

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 1100
Del.quantity cm3/ : 127.0...130.0
1000H.: (124.5...132.5)
Speed 1/min : 500
Del.quantity cm3/ : 126.5...130.5
1000H.: (124.5...132.5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.50
Speed 1/min : 1145...1160

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 95.0...105.0
1000H.: (92.0...108.0)
Contr.-rod trav.mm: 13.60...14.00

Remarks:

: MAN-NR. 2-7413

Set idle stop at 250 min. -1 to a
control-rod travel of 6.0 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 A
Edition : 16.10.87
Superceeded : 24.7.87
Calibrating oil : ISO-4113
Combination no. : 0 400 846 522
Injection pump
Pump designation : PES6A90D41ORS2667
EP type number : 0 410 896 080
Governor
Governor design. : RQV300...1400AB1065-4L
Governor no. : 0 420 212 168

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 366

1st version kW : 100.0
Speed 1/min: 2800

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant. per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
: (2.20...2.40)

H17

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 11.10...11.20

Del.quantity cm3/ : 6.3...6.4

100H.: (6.1...6.6)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.9...9.1

Del.quantity cm3/ : 0.9...1.3

100H.: (0.7...1.5)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 0.80...1.30

2nd speed 1/min: 500

Sleeve travel mm: 2.30...2.80

3rd speed 1/min: 750

Sleeve travel mm: 4.10...4.30

4th speed 1/min: 1500

Sleeve travel mm: 8.50...8.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1520

Cont.-rod travelmm: 15.20...17.60

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1400

Del.quantity cm3/ : 63.5...64.5

1000H.: (61.5...66.5)

Dispersion cm3/ : 3.00

1000H.: (4.50)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 61...69

Testing:
1st c-rod trav.mm : 10.10
Speed 1/min : 1460...1470
2nd c-rod trav.mm : 4.00
Speed 1/min : 1560...1590
4th speed 1/min : 1630
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 21...29

Testing:
Speed 1/min : 100
C-rod trav.mm min : 10.30
Speed 1/min : 300
C-rod trav.mm : 8.90...9.10

CONSTANT REGULATION

Speed 1/min : 540...680

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1400
C-rod trav.mm : 11.10...11.20
2nd speed 1/min : 500
C-rod trav.mm : 12.30...12.40
3rd speed 1/min : 900
C-rod trav.mm : 11.90...12.10
4th speed 1/min : 1100
C-rod trav.mm : 11.40...11.70

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 500
Del.quantity cm3/ : 52.0...54.0
1000H.: (49.5...56.5)
Speed 1/min : 900
Del.quantity cm3/ : 55.0...58.0
1000H.: (52.5...60.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.10
Speed 1/min : 1460...1470

STARTING FUEL DELIVERY

H18

Speed 1/min : 100
Del.quantity cm3/ : 78.0...88.0
1000H.: (75.0...91.0)
Contr.-rod trav.mm: 17.00...17.40

Remarks:

:

Set shutoff stop to contact at
3.0...3.5 mm control-rod travel.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA 5,9 A 1
Edition : 18.09.87
Superceeded : 12.9.86
Calibrating oil : ISO-4113
Combination no. : 0 400 846 550
Injection pump
Pump designation : PES6A90D410RS2713
EP type number : 0 410 896 083
Governor
Governor design. : RQV300...1350AB1175-3L
Governor no. : 0 420 212 192

Customer-spec. information
Customer : FIAT

Engine : 8060.25.640

1st version kW : 103.0
Speed 1/min: 2700

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.20...2.30
: (2.15...2.35)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1350

Contr.-rod trav.mm: 11.70...11.80

Del.quantity cm3/ : 6.8...6.9

100H.: (6.6...7.1)

Dispersion cm3/ : 0.3

100H.: (0.5)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 9.7...9.9

Del.quantity cm3/ : 1.2...1.8

100H.: (1.0...2.0)

Dispersion cm3/ : 0.2

100H.: (0.4)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 0.90...1.10

2nd speed 1/min: 435

Sleeve travel mm: 2.40...2.60

3rd speed 1/min: 780

Sleeve travel mm: 4.20...4.40

4th speed 1/min: 1400

Sleeve travel mm: 8.10...8.20

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1430

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1350

Charge press. hPa : 700

Del.quantity cm3/ : 68.5...69.5

1000H.: (66.5...71.5)

Dispersion cm3/ : 3.00

1000H.: (5.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 55...63

Testing:

1st c-rod trav.mm : 10.70
Speed 1/min : 1390...1400
2nd c-rod trav.mm : 4.00
Speed 1/min : 1515...1545
4th speed 1/min : 1650
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 14...21

Testing:

Speed 1/min : 100
C-rod trav.mm min : 11.20
Speed 1/min : 300
C-rod trav.mm : 9.70...9.90

CONSTANT REGULATION

Speed 1/min : 350...450

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1350
C-rod trav.mm : 11.70...11.80
2nd speed 1/min : 500
C-rod trav.mm : 11.70...11.90

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 700
Contr.-rod trav.mm: 11.70...11.80

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 11.20...11.30
2nd pressure hPa : 260
C-rod trav.mm : 11.40...11.50

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 800
Del.quantity cm3/ : 59.0...61.0
1000H.: (56.5...63.5)

H2O

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 44.0...46.0
1000H.: (42.0...48.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.70
Speed 1/min : 1390...1400

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 105.0...115.0
1000H.: (102.0...118.0)
Contr.-rod trav.mm: 17.10...17.50

Remarks:

Test electrically-released starting
quantity (EES) with 12 volts

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 6,1 A 8
 Edition : 18.09.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 400 866 080
 Injection pump
 Pump designation : PES6A85D410/3RS2415
 EP type number : 0 410 886 915
 Governor
 Governor design. : RSV325...1400A8C707-4L
 Governor no. : 0 420 232 461

Customer-spec. information
 Customer : KHD

Engine : BF6L913

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.00
 Calibrating nozzle-holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test inj. tubing : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 1.90...2.00
 : (1.85...2.05)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^DCS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1400

 Contr.-rod trav.mm: 10.80...10.90

 Del.quantity cm3/ : 7.6...7.7

 100H.: (7.4...7.9)

 Dispersion cm3/ : 0.3

 100H.: (0.4)

 2nd speed 1/min: 325.0
 Contr.-rod trav. m: 7.9...8.1
 Del.quantity cm3/ : 0.9...1.5
 100H.: (0.7...1.7)
 Dispersion cm3/ : 0.2
 100H.: (0.4)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
 Notch setting x : 5.25

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1400
 Charge press. hPa : 700
 Del.quantity cm3/ : 76.0...77.0
 1000H.: (74.0...79.0)
 Dispersion cm3/ : 3.00
 1000H.: (4.50)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 65...73

Testing:

1st c-rod trav.mm : 9.80
 Speed 1/min : 1440...1450
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1470...1500
 3rd c-rod trav.mm : 4.00
 Speed 1/min : 1505...1535
 4th speed 1/min : 1600
 C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 14...22

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 325
C-rod trav.mm : 7.40...7.60
C-rod trav.mm : 2.00
Speed 1/min : 600...660

TORQUE CONTROL

Dimension a mm : 1.20
Torque-control curve - 1st version
1st speed 1/min : 1400
C-rod trav.mm : 10.80...10.90
2nd speed 1/min : 500
C-rod trav.mm : 12.00...12.10
3rd speed 1/min : 1040
C-rod trav.mm : 11.40...11.60

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 700
Contr.-rod trav.mm: 12.00...12.10

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 10.20...10.30
2nd pressure hPa : 360
C-rod trav.mm : 11.70...11.80
3rd pressure hPa : 95
C-rod trav.mm : 10.60...10.80

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 44.0...47.0
1000H.: (42.0...49.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9.80
Speed 1/min : 1440...1450

H22

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 105.0...115.0
1000H.: (102.0...118.0)
Contr.-rod trav.mm: 17.10...17.30

LOW IDLE

Speed 1/min : 325
Contr.-rod trav.mm: 7.90...8.10
Del.quantity cm3/ : 9.5...15.5
1000H.: (7.5...17.5)
Dispersion cm3/ : 2.00
1000H.: (4.00)

Remarks:

Test electrically-released starting
quantity (EES) with 12 volts

The stop position of the control rod
must be easily reached with the stop
lever

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 6,2 E 4
 Edition : 09.10.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 400 866 112
 Injection pump
 Pump designation : PES6A90D320/3RS2660
 EP type number : 0 410 896 078
 Governor
 Governor design. : RSV325...1500A2C50S-2R
 Governer no. : 0 420 233 196

Customer-spec. information
 Customer : MWM

Engine : D226-6

TEST BENCH REQUIREMENTS

Calibrating-pii
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05
 : (2.90...3.10)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50
 Difference⁰ CS : 3.50...4.50

BASIC SETTING

1st speed 1/mi: 1500

 Contr.-rod trav.mm: 11.20...11.30

 Del.quantity cm3/ : 8.9...9.0

 100H.: (8.7...9.2)

 Dispersion cm3/ : 0.3

 100H.: (0.5)

 2nd speed 1/min: 325.0
 Contr.-rod trav. m: 7.0...7.2
 Del.quantity cm3/ : 0.8...1.4
 100H.: (0.6...1.6)
 Dispersion cm3/ : 0.2
 100H.: (0.4)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...0.70

Governor-spring reload
 Notch setting x : 4.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1500
 Del.quantity cm3/ : 89.5...90.5
 1000H.: (87.5...92.5)
 Dispersion cm3/ : 3.00
 1000H.: (5.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 59...67

Testing:
 1st c-rod trav.mm : 10.20
 Speed 1/min : 1540...1550
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1590...1620

3rd c-rod trav.mm : 4.00
Speed 1/min : 1615...1645
4th speed 1/min : 1780
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 20...28
Setting point w/out aux. spring
Speed 1/min : 325
Contr.-rod trav.mm: 6.6

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 325
C-rod trav.mm : 7.00...7.20
C-rod trav.mm : 2.00
Speed 1/min : 465...525

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 10.20
Speed 1/min : 1540...1550

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 5,7 Q 17
Edition : 18.09.87
Superceeded : 2.9.87
Calibrating oil : ISO-4113

Combination no. : 0 400 876 259

Injection pump
Pump designation : PES6A90D41ORS2293
EP type number : 0 410 896 031
Governor
Governor design. : RSV350...1400AOC1080
L
Governor no. : 0 420 232 408

Customer-spec. information
Customer : DAIMLER-BENZ

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25
 : (2.10...2.30)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + -^o : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 9.70...9.80

Del.quantity cm3/ : 6.3...6.4

100H.: (6.1...6.6)

Dispersion cm3/ : 0.3

100H.: (0.4)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 6.5...7.1
Del.quantity cm3/ : 1.0...1.2
100H.: (0.8...1.4)
Dispersion cm3/ : 0.2
100H.: (-)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...0.70

Governor-spring reload
Notch setting x : 3.50

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1400
Del.quantity cm3/ : 63.0...64.0
1000H.: (61.0...66.0)
Dispersion cm3/ : 3.00
1000H.: (4.50)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 64...72

Testing:
1st c-rod trav.mm : 8.70
Speed 1/min : 1440...1445
2nd c-rod trav.mm : 4.00
Speed 1/min : 1473...1486
3rd c-rod trav.mm : 4.00
Speed 1/min : 1510...1540
4th speed 1/min : 1570
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: -3
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 6.80

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 350
C-rod trav.mm : 6.70...6.90
C-rod trav.mm : 2.00
Speed 1/min : 450...510

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1400
C-rod trav.mm : 9.70...9.80
2nd speed 1/min : 600
C-rod trav.mm : 9.90...10.10

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 600
Del.quantity cm3/ : 51.0...53.0
1000H.: (49.0...55.0)
Speed 1/min : 850
Del.quantity cm3/ : 56.0...58.0
1000H.: (53.5...60.5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than
full-load trav.mm: 8.70
Speed 1/min : 1440...1445

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 78.0...88.0
1000H.: (75.0...91.0)
Contr.-rod trav.mm: 15.00...15.40

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 6.50...7.10
Del.quantity cm3/ : 10.0...12.0
1000H.: (8.0...14.0)
Dispersion cm3/ : 2.00
1000H.: (-)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : LIE 8,4 A
Edition : 09.10.87
Superceeded : 28.8.87
Calibrating oil : ISO-4113
Combination no. : 0 400 876 322
Injection pump
Pump designation : PES6A95D41ORS2689
EP type number : 0 410 896 916
Governor
Governor design. : RSV400...1000A1C2187
L
Governor no. : 0 420 232 387

Customer-spec. information
Customer : LIEBHERR

Engine : D906 NA

1st version kW : 112.0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 40...45

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80
: (2.65...2.85)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + -^o : 0.50 (0.75)

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 8.50...9.50
& c-rod tray max. : 21.0
Difference^o CS : 4.00...5.00

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 9.70...9.80

Del.quantity cm³/ : 8.1...8.3

100H.: (7.9...8.5)

Dispersion cm³/ : 0.3

100H.: (0.6)

2nd speed 1/min: 400.0
Contr.-rod trav. m: 6.4...6.6
Del.quantity cm³/ : 1.0...1.6
100H.: (0.7...1.8)
Dispersion cm³/ : 0.3
100H.: (0.5)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...0.70

Governor-spring reload
Notch setting x : 4.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1000
Del.quantity cm³/ : 81.0...83.0
1000H.: (79.0...85.0)
Dispersion cm³/ : 3.50
1000H.: (6.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 46...54

Testing:

H28

1st c-rod trav.mm : 8.70
Speed 1/min : 1040...1050
2nd c-rod trav.mm : 4.00
Speed 1/min : 1050...1080
3rd c-rod trav.mm : 4.00
Speed 1/min : 1090...1120
4th speed 1/min : 1230
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 20...28
Setting point w/out aux. spring
Speed 1/min : 400
Contr.-rod trav.mm: 6.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 400
C-rod trav.mm : 6.40...6.60
C-rod trav.mm : 2.00
Speed 1/min : 530...590

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1000
C-rod trav.mm : 9.70...9.80
2nd speed 1/min : 500
C-rod trav.mm : 9.70...9.90

FUEL-DELIVERY CHARACTERISTICS

1st version
Speed 1/min : 600
Del.quantity cm³/ : 70.0...73.0
1000H.: (67.5...75.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 8.70
Speed 1/min : 1040...1050

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 120.0...130.0
1000H.: (117.0...133.0)
Contr.-rod trav.mm: 19.50...21.00

LOW IDLE

Speed 1/min : 400
Contr.-rod trav.mm: 6.40...6.60

Del. quantity cm3/ : 10.0...16.0
1000H.: (7.5...18.5)
Dispersion cm3/ : 3.50
1000H.: (5.50)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 C 1
Edition : 09.10.87
Superceeded : 10.85
Calibrating oil : ISO-4113

Combination no. : 0 400 876 334

Injection pump
Pump designation : PES6A90D410RS2710-1
EP type number : 0 410 896 084
Governor
Governor design. : RSV350...75DAOC2006-
3L
Governor no. : 0 420 232 454

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 366

1st version kW : 54.0
Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness : 6.00x1.50x600
x Length mm

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
: (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.20...12.30

Del.quantity cm3/ : 6.4...6.5

100H.: (6.2...6.7)

Dispersion cm3/ : 0.3

100H.: (0.5)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 8.2...8.4

Del.quantity cm3/ : 0.6...1.2

100H.: (0.4...1.4)

Dispersion cm3/ : 0.2

100H.: (0.4)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700

Del.quantity cm3/ : 64.0...65.0

1000H.: (62.0...67.0)

Dispersion cm3/ : 3.00

1000H.: (5.00)

HIGHEST RATED SPEED

1st version
Control-lever

position degrees: 28...36

Testing:

1st c-rod trav.mm : 11.20

Speed 1/min : 750...755

2nd c-rod trav.mm : 4.00

Speed 1/min : 775...788

4th speed 1/min : 900

C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 16...24

Setting point w/out aux. spring

Speed 1/min : 350

Contr.-rod trav.mm: 8.3

Testing:

J03

Speed 1/min : 100

C-rod trav.mm min : 19.50
Speed 1/min : 350

C-rod trav.mm : 8.20...8.40
C-rod trav.mm : 2.00
Speed 1/min : 380...420

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 78.0...88.0

1000H.: (75.0...91.0)

Remarks:

Observe VDT-I-420/120

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SSC 38,1 A1
 Edition : 09.10.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 830 712
 Injection pump
 Pump designation : PE12P130A520/6LS3090
 -3
 EP type number : 0 401 830 706
 Governor
 Governor design. : RQV300...750PA874
 Governor no. : 0 421 813 663
 Customer-spec. information
 Customer : SSCM
 Engine : VD 25-V 12
 1st version kW : 632.0
 Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Calibrating nozzle-holder
 assembly : 1 688 901 019
 Opening
 pressure, bar : 207...210
 Test inj. tubing : 1 680 750 067
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000
 (A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.80...2.90
 : (2.75...2.95)

J04

Cam sequence : 1- 8- 5- 10- 3- 7-
 6- 11- 2- 9- 4- 12

SD ang. spacing°CS: 0-37.5-60-97.5-120-
 157.5-180-217.5-240-
 277.5-300-337.5
 Tolerance + - ° : 0.50 (0.75)
 SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 750

 Contr.-rod trav.mm: 13.80...13.90

 Del.quantity cm3/ : 34.8...35.1

 100H.: (34.4...35.4)

 Dispersion cm3/ : 0.6

 100H.: (1.0)

 2nd speed 1/min: 300.0
 Contr.-rod trav. m: 5.4...5.8
 Del.quantity cm3/ : 1.7...2.3
 100H.: (1.3...2.7)
 Dispersion cm3/ : 1.0
 100H.: (1.4)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
 Sleeve travel mm: 1.10...1.30
 2nd speed 1/min: 600
 Sleeve travel mm: 5.10...5.50
 3rd speed 1/min: 750
 Sleeve travel mm: 7.40...7.80

SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed 1/min: 790
 Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 750
 Del.quantity cm3/ : 348.0...351.0
 1000H.: (344.5...354.5)
 Dispersion cm3/ : 6.00
 1000H.: (10.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 62...70

Testing:
1st c-rod trav.mm : 12.80
Speed 1/min : 790...800
2nd c-rod trav.mm : 4.00
Speed 1/min : 850...880
4th speed 1/min : 950
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I
Control-lever
position degrees: 8...16

Testing:
Speed 1/min : 100
C-rod trav.mm min : 7.10
Speed 1/min : 300
C-rod trav.mm : 5.40...5.80

CONSTANT REGULATION
Speed 1/min : 330...440

SWITCH-OVER POINT

Speed 1/min : 250 (270)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 12.80
Speed 1/min : 790...800

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 5.40...5.80
Del.quantity cm3/ : 17.0...23.0
1000H.: (13.0...27.0)
Dispersion cm3/ : 10.00
1000H.: (14.00)

Remarks:

APPLICATION
Navy

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SSC 38,1 B
 Edition : 09.10.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 830 713
 Injection pump
 Pump designation : PE12P130AS20/6LS3181
 -1
 EP type number : 0 401 830 707
 Governor
 Governor design. : RQV300...750PA874
 Governer no. : 0 421 813 663

Customer-spec. information
 Customer : SSCM

Engine : UD 25-V 12

1st version kW : 632.0
 Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 443 022

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 060

Outside diameter
 x Wall thickness
 x Length mm : 8.00x2.00x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

J06

Cam sequence : 1- 8- 5- 10- 3- 7-
 6- 11- 2- 9- 4- 12

SD ang. spacing°CS: 0-37.5-60-97.5-120-
 157.5-180-217.5-240-
 277.5-300-337.5

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 750

Contr.-rod trav.mm: 13.90...14.00

Del.quantity cm3/ : 44.8...45.2

100H.: (44.4...35.4)

Dispersion cm3/ : 0.6

100H.: (1.0)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 4.4...4.8

Del.quantity cm3/ : 1.7...2.3

100H.: (1.3...2.7)

Dispersion cm3/ : 1.0

100H.: (1.4)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.10...1.30

2nd speed 1/min: 600

Sleeve travel mm: 5.10...5.50

3rd speed 1/min: 750

Sleeve travel mm: 7.40...7.80

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 790

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 750

Del.quantity cm3/ : 448.0...452.0

1000H.: (444.5...354.5)

Dispersion cm3/ : 6.00

1000H.: (10.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 62...70

Testing:
1st c-rod trav.mm : 12.90
Speed 1/min : 790...800
2nd c-rod trav.mm : 4.00
Speed 1/min : 850...880
4th speed 1/min : 950
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I
Control-lever
position degrees: 8...16

Testing:
Speed 1/min : 100
C-rod trav.mm min : 6.10
Speed 1/min : 300
C-rod trav.mm : 4.40...4.80

CONSTANT REGULATION
Speed 1/min : 330...440

SWITCH-OVER POINT

Speed 1/min : 250 (270)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 12.90
Speed 1/min : 790...800

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 4.40...4.80
Del. quantity cm³/ : 17.0...23.0
1000H.: (13.0...27.0)
Dispersion cm³/ : 10.00
1000H.: (14.00)

Remarks:

APPLICATION
Navy

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6M14
 Edition : 09.10.87
 Superceeded : 10.8.87
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 542
 Injection pump
 Pump designation : PE6P100A32ORS384-1
 EP type number : 0 411 806 189
 Governor
 Governor design. : RQ225/1000PA868
 Governer no. : 0 421 801 403

Customer-spec. information
 Customer : DAF

Engine : DKDL 1160 SB 220
 1st version kW : 220.0
 Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
 : (3.15...3.35)
 Contr.-rod trav.mm: 9.00...12.00

J08

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 600

 Contr.-rod trav.mm: 11.40...11.50

 Del.quantity cm3/ : 9.8...10.0

 100H.: (9.6...10.2)

 Dispersion cm3/ : 0.3

 100H.: (0.6)

 2nd speed 1/min: 250.0
 Contr.-rod trav. m: 7.5...7.7
 Del.quantity cm3/ : 0.9...1.3
 100H.: (0.6...1.5)
 Dispersion cm3/ : 0.3
 100H.: (0.5)

SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed 1/min: 550
 Contr.-rod travelmm: 15.20...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 600
 Del.quantity cm3/ : 98.0...100.0
 1000H.: (96.0...102.0)
 Dispersion cm3/ : 3.50
 1000H.: (6.00)

HIGHEST RATED SPEED

1st version
 Setting point:
 Speed 1/min : 550
 Contr.-rod trav.mm: 15.8

Testing:
 1st c-rod trav.mm : 9.60
 Speed 1/min : 1045...1060
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1100...1130
 4th speed 1/min : 1250
 C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 7.6

Remarks:

:

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.40

Speed 1/min : 250

C-rod trav.mm : 7.50...7.70

C-rod trav.mm : 2.00

Speed 1/min : 345...385

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 600

C-rod trav.mm : 11.40...11.50

2nd speed 1/min : 1000

C-rod trav.mm : 10.60...10.80

3rd speed 1/min : 825

C-rod trav.mm : 11.10...11.30

4th speed 1/min : 900

C-rod trav.mm : 10.80...11.10

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 1000

Del.quantity cm³/ : 93.0...97.0

1000H.: (90.5...99.5)

SETTING CONTROL-ROD STOP

Speed 1/min : 600

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 9.60

Speed 1/min : 1045...1060

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm³/ : 180.0...220.0

1000H.: (176.0...224.0)

Contr.-rod trav.mm: 19.50...21.00

LOW IDLE

Speed 1/min : 250

Contr.-rod trav.mm: 7.50...7.70

Del.quantity cm³/ : 9.0...13.0

1000H.: (6.5...15.5)

Dispersion cm³/ : 3.50

1000H.: (5.50)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : RVI 11,9 A1
Edition : 09.10.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 846 543
Injection pump
Pump designation : PE6P110A720RS380
EP type number : 0 411 816 126
Governor
Governor design. : RQV250...1000PA434-4
Governor no. : 0 421 813 659

Customer-spec. information
Customer : RVI

Engine : BSR 36 F

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness : 6.00X1.50X600
x Length mm

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 15.40...15.50

Del.quantity cm³/ : 19.4...19.7

100H.: (19.1...19.9)

Dispersion cm³/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 7.6...8.0
Del.quantity cm³/ : 1.4...1.9
100H.: (1.1...2.1)
Dispersion cm³/ : 0.4
100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 1.70...2.00
2nd speed 1/min: 850
Sleeve travel mm: 6.00...6.40
3rd speed 1/min: 1000
Sleeve travel mm: 7.30...7.50

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1100
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1000
Charge press. hPa : 900
Del.quantity cm³/ : 194.0...197.0
1000H.: (191.5...199.5)
Dispersion cm³/ : 4.00
1000H.: (7.50)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 62...70

Testing:

1st c-rod trav.mm : 14.40
Speed 1/min : 1040...1050
2nd c-rod trav.mm : 4.00
Speed 1/min : 1190...1220
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 11...19

Testing:

Speed 1/min : 100
C-rod trav.mm min : 9.30
Speed 1/min : 250
C-rod trav.mm : 7.60...8.00

CONSTANT REGULATION

Speed 1/min : 345...465

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 15.40...15.50

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 12.80...13.00
2nd pressure hPa : 430
C-rod trav.mm : 15.40...15.50
3rd pressure hPa : 300
C-rod trav.mm : 13.90...14.20

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 700
Del.quantity cm³/ : 198.0...204.0
1000H.: (195.0...207.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm³/ : 141.0...144.0
1000H.: (138.5...146.5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 14.40

Speed 1/min : 1040...1050

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : ENA 11,9 A
Edition : 09.10.87
Superceeded : 28.8.87
Calibrating oil : ISO-4113

Combination no. : 0 401 846 550

Injection pump
Pump designation : PE6P120A32ORS257
EP type number : 0 411 826 075
Governor
Governor design. : RQV250...1050PA808-2
Governor no. : 0 421 813 666

Customer-spec. information
Customer : ENASA

Engine : 96 T1 CX

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness : 6.00X1.50X1000
x Length mm

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1030

Contr.-rod trav.mm: 12.30...12.40

Del.quantity cm3/ : 24.6...24.8

100H.: (24.3...25.1)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 5.6...5.8
Del.quantity cm3/ : 1.7...2.3
100H.: (1.4...2.6)
Dispersion cm3/ : 0.8
100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250
Sleeve travel mm: 1.00...1.40
2nd speed 1/min: 350
Sleeve travel mm: 1.70...2.30
3rd speed 1/min: 700
Sleeve travel mm: 4.50...5.10
4th speed 1/min: 1095
Sleeve travel mm: 8.20...8.40
5th speed 1/min: 1185
Sleeve travel mm: 9.20...9.60

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1115
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1030
Charge press. hPa : 900
Del.quantity cm3/ : 246.0...248.0
1000H.: (243.0...251.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 43...51

Testing:

1st c-rod trav.mm : 11.30
Speed 1/min : 1090...1100
2nd c-rod trav.mm : 4.00
Speed 1/min : 1180...1210
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 8...16

Testing:

Speed 1/min : 100
C-rod trav.mm min : 7.20
Speed 1/min : 250
C-rod trav.mm : 5.60...5.80

CONSTANT REGULATION

Speed 1/min : 250...370

Adjustment test, manifold-pressure
compensator (LDA, ADA, ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 12.30...12.40

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 8.20...9.60
2nd pressure hPa : 570
C-rod trav.mm : 11.60...11.70
3rd pressure hPa : 280
C-rod trav.mm : 9.90...10.10

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 650
Del.quantity cm3/ : 229.0...235.0
1000H.: (226.0...2388.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 141.0...143.0
1000H.: (138.0...146.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.30
Speed 1/min : 1090...1100

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 135.0...165.0
1000H.: (131.0...169.0)

Remarks:
:

APPLICATION
Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10,0 0
 Edition : 09.10.87
 Superceeded : 12.6.87
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 745
 Injection pump
 Pump designation : PE6P110A32ORS3080
 EP type number : 0 411 816 722
 Governor
 Governor design. : RQV250...1100PA589
 Governer no. : 0 421 813 307

Customer-spec. information
 Customer : VOLVO

Engine : TD100GA

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
 Tolerance + -^o : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.30...12.40

Del.quantity cm³/ : 16.7...16.9

100H.: (16.4...17.2)

Dispersion cm³/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 3.9...4.1

Del.quantity cm³/ : 1.5...1.9

100H.: (1.2...2.1)

Dispersion cm³/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.20...1.30

2nd speed 1/min: 370

Sleeve travel mm: 2.60...3.00

3rd speed 1/min: 430

Sleeve travel mm: 3.50...3.90

4th speed 1/min: 1160

Sleeve travel mm: 8.10...8.30

5th speed 1/min: 1210

Sleeve travel mm: 9.40...9.60

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1180

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm³/ : 167.0...169.0

1000H.: (164.0...172.0)

Dispersion cm³/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 59...76

Testing:
1st c-rod trav.mm : 11.30
Speed 1/min : 1160...1170
2nd c-rod trav.mm : 4.00
Speed 1/min : 1220...1250
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I
Control-lever
position degrees: 4...12

Testing:
Speed 1/min : 100
C-rod trav.mm min : 5.30
Speed 1/min : 250
C-rod trav.mm : 3.90...4.10

CONSTANT REGULATION
Speed 1/min : 270...380

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version
Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 12.30...12.40

Measurement
Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.80...10.00
2nd pressure hPa : 610
C-rod trav.mm : 12.10...12.20
3rd pressure hPa : 280
C-rod trav.mm : 10.10...10.30

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : -
Speed 1/min : 700
Del. quantity cm³/ : 121.0...124.0
1000H.: (118.5...126.5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than
full-load trav.mm: 11.30
Speed 1/min : 1160...1170

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 160.0...190.0
1000H.: (156.0...196.0)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 3.90...4.10
Del. quantity cm³/ : 15.0...19.0
1000H.: (12.5...21.5)
Dispersion cm³/ : 3.00
1000H.: (6.00)

Remarks:
Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10,0 03
 Edition : 09.10.87
 Superceeded : 12.6.87
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 768
 Injection pump
 Pump designation : PE6P110A32ORS3080-1
 EP type number : 0 411 816 734
 Governor
 Governor design. : RQV250...102SPA589
 Governer no. : 0 421 813 332

Customer-spec. information
 Customer : VOLVO

Engine : TD100FA

1st version kW : 220.0
 Speed 1/min: 2050

TEST BENCH REQUIREMENTS

Calibrating-pil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6,00X1,50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3,00...3,10
 : (2,95...3,15)

Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
 Tolerance + -^o : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.20...13.30

Del.quantity cm3/ : 17.9...18.2

100H.: (17.7...18.5)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 4.3...4.5

Del.quantity cm3/ : 1.5...1.9

100H.: (1.2...2.1)

Dispersion cm3/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.20...1.30

2nd speed 1/min: 350

Sleeve travel mm: 2.20...2.80

3rd speed 1/min: 430

Sleeve travel mm: 3.50...3.90

4th speed 1/min: 1080

Sleeve travel mm: 8.40...8.50

5th speed 1/min: 1150

Sleeve travel mm: 9.50...9.80

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1080

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm3/ : 179.5...182.5

1000H.: (177.0...185.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 61...69

Testing:
1st c-rod trav.mm : 12.20
Speed 1/min : 1085...1095
2nd c-rod trav.mm : 4.00
Speed 1/min : 1160...1190
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I
Control-lever
position degrees: 5...13

Testing:
Speed 1/min : 100
C-rod trav.mm min : 5.80
Speed 1/min : 250
C-rod trav.mm : 4.30...4.50

CONSTANT REGULATION
Speed 1/min : 270...380

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version
Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13.20...13.30

Measurement
Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 10.60...10.80
2nd pressure hPa : 670
C-rod trav.mm : 13.00...13.10
3rd pressure hPa : 310
C-rod trav.mm : 11.00...11.20

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 900
Speed 1/min : 1000
Del.quantity cm3/ : 171.0...177.0
1000H.: (169.0...179.0)
Charge press. hPa : -
Speed 1/min : 700
Del.quantity cm3/ : 132.0...135.0
1000H.: (129.5...137.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 12.20
Speed 1/min : 1085...1095

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 150.0...200.0
1000H.: (146.0...204.0)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 4.30...4.50
Del.quantity cm3/ : 15.0...19.0
1000H.: (12.5...21.5)
Dispersion cm3/ : 3.00
1000H.: (6.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10,0 Q6
Edition : 09.10.87
Superceeded : 23.9.86
Calibrating oil : ISO-4113
Combination no. : 0 401 846 784
Injection pump
Pump designation : PE6P110A32ORS3108V
EP type number : 0 411 816 737
Governor
Governor design. : RQV250...1100PA649
Governor no. : 0 421 813 346

Customer-spec. information
Customer : VOLVO

Engine : B10/THD101FD

1st version kW : 210.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
Contr.-rod trav.mm: 9.00...12.00

J20

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.70...13.80

Del.quantity cm³/ : 18.0...18.2

100H.: (17.7...18.5)

Dispersion cm³/ : 0.4

100H.: (0.7)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 5.3...5.5

Del.quantity cm³/ : 3.0...3.4

100H.: (2.7...3.6)

Dispersion cm³/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.10...1.30

2nd speed 1/min: 500

Sleeve travel mm: 4.10...4.90

3rd speed 1/min: 700

Sleeve travel mm: 6.30...6.70

4th speed 1/min: 950

Sleeve travel mm: 6.30...6.70

5th speed 1/min: 1100

Sleeve travel mm: 7.00...7.50

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1175

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 1200

Del.quantity cm³/ : 180.0...182.0

1000H.: (177.0...185.0)

Dispersion cm³/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 61...69

Testing:

1st c-rod trav.mm : 12.70
Speed 1/min : 1160...1170
2nd c-rod trav.mm : 4.00
Speed 1/min : 1240...1270
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 7...15

Testing:

Speed 1/min : 100
C-rod trav.mm min : 6.80
Speed 1/min : 250
C-rod trav.mm : 5.30...5.50
C-rod trav.mm : 2.00
Speed 1/min : 345...405

Adjustment test, manifold-pressure
compensator (LDA, ADA, ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 1200
Contr.-rod trav.mm: 13.70...13.80

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 9.60...9.90
2nd pressure hPa : 300
C-rod trav.mm : 10.00...10.10
3rd pressure hPa : 870
C-rod trav.mm : 13.30...13.50

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -
Speed 1/min : 700
Del. quantity cm3/ : 106.0...108.0
1000H.: (103.0...111.0)

ROTATIONAL-SPEED LIMITATION

1st version

J21

1mm control-rod travel less than

full-load trav.mm: 12.70
Speed 1/min : 1160...1170

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm3/ : 160.0...190.0
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 5.30...5.50
Del. quantity cm3/ : 30.0...34.0
1000H.: (27.5...36.5)
Dispersion cm3/ : 3.00
1000H.: (6.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 S 2
 Edition : 16.10.87
 Superceeded : 23.9.86
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 829
 Injection pump
 Pump designation : PE6P11DA32DLS383S
 EP type number : 0 411 816 749
 Governor
 Governor design. : RQ300/950PA827-1K
 Governer no. : 0 421 803 093

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 150.0
 Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing^DCS: 0-45-120-165-240-285
 Tolerance + -^g : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 950

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 12.6...12.8

100H.: (12.3...13.0)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.8...9.0

Del.quantity cm3/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.60...1.80

2nd speed 1/min: 500

Sleeve travel mm: 5.50...5.70

3rd speed 1/min: 775

Sleeve travel mm: 6.50...6.80

4th speed 1/min: 950

Sleeve travel mm: 7.50...7.80

5th speed 1/min: 1100

Sleeve travel mm: 9.50...10.00

SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Contr.-rod travelmm: 14.70...15.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 950

Del.quantity cm3/ : 126.0...128.0

1000H.: (123.5...130.5)

Dispersion cm³/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 32...40

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 15.2

Testing:
1st c-rod trav.mm : 12.10
Speed 1/min : 995...1010
2nd c-rod trav.mm : 4.00
Speed 1/min : 1060...1090
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I
Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 8.8

Testing:
Speed 1/min : 200
C-rod trav.mm min : 10.50
Speed 1/min : 300
C-rod trav.mm : 8.80...8.90
C-rod trav.mm : 2.00
Speed 1/min : 450...490
Speed 1/min : 550
C-rod trav.mm max : 1.80

FUEL-DELIVERY CHARACTERISTICS

1st version
Speed 1/min : 600
Del.quantity cm³/ : 117.0...120.0
1000H.: (114.0...123.0)
Dispersion cm³/ : 6.00
1000H.: (9.00)
Speed 1/min : 750
Del.quantity cm³/ : 120.0...124.0
1000H.: (117.0...127.0)
Dispersion cm³/ : 6.00
1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 12.10
Speed 1/min : 995...1010

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 120.0...140.0
1000H.: (116.0...144.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 D1
Edition : 09.10.87
Superceeded : 18.9.87
Calibrating oil : ISO-4113

Combination no. : 0 401 846 831

Injection pump
Pump designation : PE6P120A320RS3183-1Y
EP type number : 0 411 826 765
Governor
Governor design. : RQ250/1000PA832
Governor no. : 0 421 801 368

Customer-spec. information
Customer : DAF

Engine : WS 282

1st version kW : 282.0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm3/ : 21.9...22.1

100H.: (21.6...22.4)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 6.6...7.0
Del.quantity cm3/ : 1.4...2.0
100H.: (1.1...2.3)
Dispersion cm3/ : 0.8
100H.: (1.2)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 550
Contr.-rod travelmm: 15.20...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 850
Charge press. hPa : 1000
Del.quantity cm3/ : 219.0...221.0
1000H.: (216.0...224.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Setting point:
Speed 1/min : 550
Contr.-rod trav.mm: 15.8

Testing:

1st c-rod trav.mm : 12.10
Speed 1/min : 1035...1050
2nd c-rod trav.mm : 4.00
Speed 1/min : 1120...1150
4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 9...17
Setting point w/out aux. spring
Speed 1/min : 250
Contr.-rod trav.mm: 6.8

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.30
Speed 1/min : 250
C-rod trav.mm : 6.60...7.00
C-rod trav.mm : 2.00
Speed 1/min : 350...390

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 850
C-rod trav.mm : 13.30...13.40
2nd speed 1/min : 1000
C-rod trav.mm : 13.20...13.40

Adjustment test, manifold-pressure
compensator (LDA, ADA, ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 1000
Contr.-rod trav.mm: 13.10...13.20

Measurement

Speed 1/min : 600
1st pressure hPa : -
C-rod trav.mm : 10.10...10.30
2nd pressure hPa : 570
C-rod trav.mm : 12.40...12.50
3rd pressure hPa : 310
C-rod trav.mm : 10.70...11.00

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -
Speed 1/min : 600
Del.quantity cm3/ : 144.0...146.0
1000H.: (141.0...149.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than
full-load trav.mm: 12.10
Speed 1/min : 1035...1050

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm3/ : 260.0...300.0
1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.60...7.00
Del. quantity cm3/ : 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 L 3
Edition : 09.10.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 846 832
Injection pump
Pump designation : PE6P120A32OLS3815-12
EP type number : 0 411 826 770
Governor
Governor design. : RQ300/1050PA840-1
Governor no. : 0 421 801 418

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 441 A

1st version kW : 191.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
: (3.55...3.75)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 13.10...13.30

Del.quantity cm3/ : 19.0...19.2

100H.: (18.7...19.5)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 5.4...5.6

Del.quantity cm3/ : 1.4...2.2

100H.: (1.1...2.5)

Dispersion cm3/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 2.00...2.20

2nd speed 1/min: 600
Sleeve travel mm: 5.90...6.10

3rd speed 1/min: 900
Sleeve travel mm: 6.60...6.80

4th speed 1/min: 1100
Sleeve travel mm: 7.00...7.40

5th speed 1/min: 1175
Sleeve travel mm: 9.50...10.00

SLEEVE POSITION

Control-lever position
Degree: -1

Speed 1/min: 600
Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

Speed 1/min: 600
Charge press. hPa : 700
Del.quantity cm3/ : 190.0...192.0
1000H.: (187.0...195.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 20.0

Testing:
1st c-rod trav.mm : 11.60
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1170...1200
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 5.5

Testing:
Speed 1/min : 100
C-rod trav.mm min : 6.90
Speed 1/min : 300
C-rod trav.mm : 5.40...5.60
C-rod trav.mm : 2.00
Speed 1/min : 390...430

TORQUE CONTROL

Dimension a mm : 0.90
2nd speed 1/min : 1050
C-rod trav.mm : 12.30...12.50
3rd speed 1/min : 700
C-rod trav.mm : 13.50...13.70

Adjustment test, manifold-pressure
compensator (LDA, ADA, ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 700
Contr.-rod trav.mm: 13.10...13.30

Measurement
Speed 1/min : 600

1st pressure hPa : 350
C-rod trav.mm : 11.10...11.30
2nd pressure hPa : 550
C-rod trav.mm : 12.70...12.90

3rd pressure hPa : 780
C-rod trav.mm : 13.20...13.30
4th pressure hPa : 1100
C-rod trav.mm : 13.45...13.55

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1100
Speed 1/min : 1050
Del.quantity cm3/ : 184.0...187.0
1000H.: (181.0...190.0)

Dispersion cm3/ : 8.00
1000H.: (12.0)

Charge press. hPa : 1100
Speed 1/min : 700
Del.quantity cm3/ : 204.0...208.0
1000H.: (201.0...211.0)

Dispersion cm3/ : 8.00
1000H.: (12.0)

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 129.0...131.0
1000H.: (126.0...134.0)

Dispersion cm3/ : 8.00
1000H.: (-)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.60
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 190.0...210.0
1000H.: (186.0...214.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 D2
Edition : 09.10.87
Superceeded : 18.9.87
Calibrating oil : ISO-4113
Combination no. : 0 401 846 835
Injection pump
Pump designation : PE6P120A32ORS3183-1
EP type number : 0 411 826 758
Governor
Governor design. : RQ250/1000PA832
Governor no. : 0 421 801 368

Customer-spec. information
Customer : DAF

Engine : WS 259

1st version kW : 259,0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 12.10...12.20

Del.quantity cm³/ : 20.0...20.2

100H.: (19.7...20.5)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.6...7.0

Del.quantity cm³/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm³/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 550

Contr.-rod travelmm: 15.20...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 1000

Del.quantity cm³/ : 200.0...202.0

1000H.: (197.0...205.0)

Dispersion cm³/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Setting point:

Speed 1/min : 550

Contr.-rod trav.mm: 15.8

Testing:

1st c-rod trav.mm : 11.10

Speed 1/min : 1035...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1125...1155

K03

4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.8

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.30

Speed 1/min : 250

C-rod trav.mm : 6.60...7.00

C-rod trav.mm : 2.00

Speed 1/min : 350...390

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 850

C-rod trav.mm : 12.10...12.20

2nd speed 1/min : 1000

C-rod trav.mm : 12.00...12.20

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : 1000

Contr.-rod trav.mm: 12.10...12.20

Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 10.10...10.30

2nd pressure hPa : 430

C-rod trav.mm : 11.60...11.70

3rd pressure hPa : 280

C-rod trav.mm : 10.50...10.70

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm³/ : 144.0...146.0

1000H.: (141.0...149.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.10

Speed 1/min : 1035...1050

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 260.0...300.0
1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.60...7.00
Del.quantity cm³/ : 16.0...22.0
1000H.: (13.0...25.0)
Dispersion cm³/ : 8.00
1000H.: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 E1
Edition : 09.10.87
Superceeded : 18.9.87
Calibrating oil : ISO-4113

Combination no. : 0 401 846 839

Injection pump
Pump designation : PE6P120A32ORS3183-1Y
EP type number : 0 411 826 765
Governor
Governor design. : RQV250...1000PA851
Governor no. : 0 421 813 604

Customer-spec. information
Customer : DAF

Engine : WS 282

1st version kW : 282.0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 13.10...13.20

Del.quantity cm³/ : 21.9...22.1

100H.: (21.6...22.4)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.6...7.0

Del.quantity cm³/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm³/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.30...1.70

2nd speed 1/min: 400

Sleeve travel mm: 3.20...3.60

3rd speed 1/min: 800

Sleeve travel mm: 5.80...6.20

4th speed 1/min: 1000

Sleeve travel mm: 7.90...8.10

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1040

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 1000

Del.quantity cm³/ : 219.0...221.0

1000H.: (216.0...224.0)

Dispersion cm³/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 51...59

Testing:

1st c-rod trav.mm : 12.10

Speed 1/min : 1040...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1130...1160

4th speed 1/min : 1250

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 15...23

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.30

Speed 1/min : 250

C-rod trav.mm : 6.60...7.00

CONSTANT REGULATION

Speed 1/min : 275...385

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : 1000

Contr.-rod trav.mm: 13.10...13.20

Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 10.10...10.30

2nd pressure hPa : 570

C-rod trav.mm : 12.40...12.50

3rd pressure hPa : 310

C-rod trav.mm : 10.60...10.90

SWITCH-OVER POINT

Speed 1/min : 200 (220)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm³/ : 144.0...146.0

1000H.: (141.0...149.0)

ROTATIONAL-SPEED LIMITATION

1st version
Imm control-rod travel less than
full-load trav.mm: 12.10
Speed 1/min : 1040...1050

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 260.0...300.0
1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.60...7.00
Del.quantity cm³/ : 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm³/ : 8.00
1000H.: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 E2
Edition : 09.10.87
Superceeded : 13.5.87
Calibrating oil : ISO-4113

Combination no. : 0 401 846 840

Injection pump
Pump designation : PE6P120A32ORS3183-1Z
EP type number : 0 411 826 760
Governor
Governor design. : RQV250...1000PA851-1
Governor no. : 0 421 813 605

Customer-spec. information
Customer : DAF

Engine : WS 225

1st version kW : 225.0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + -^o : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 11.30...11.40

Del.quantity cm³/ : 18.1...18.3

100H.: (17.8...18.6)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.6...7.0

Del.quantity cm³/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm³/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.30...1.70

2nd speed 1/min: 400

Sleeve travel mm: 3.20...3.60

3rd speed 1/min: 800

Sleeve travel mm: 5.80...6.20

4th speed 1/min: 1000

Sleeve travel mm: 7.90...8.10

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1040

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 1000

Del.quantity cm³/ : 181.0...183.0

1000H.: (178.0...186.0)

Dispersion cm³/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 50...58

Testing:

1st c-rod trav.mm : 10.30

Speed 1/min : 1040...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1120...1150

4th speed 1/min : 1250

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 15...23

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.30

Speed 1/min : 250

C-rod trav.mm : 6.60...7.00

CONSTANT REGULATION

Speed 1/min : 275...385

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : 1000

Contr.-rod trav.mm: 11.30...11.40

Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 10.10...10.30

2nd pressure hPa : 330

C-rod trav.mm : 11.00...11.10

3rd pressure hPa : 260

C-rod trav.mm : 10.50...10.70

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm³/ : 144.0...146.0

1000H.: (141.0...149.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.30
Speed 1/min : 1040...1050

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 260.0...300.0
1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.60...7.00
Del.quantity cm3/ : 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 E3
Edition : 09.10.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 846 841
Injection pump
Pump designation : PE6P120A32ORS3183-1
EP type number : 0 411 826 758
Governor
Governor design. : RQV250...1000PA851-2
Governor no. : 0 421 813 606

Customer-spec. information
Customer : DAF

Engine : WS 259

1st version kW : 259.0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 12.10...12.20

Del.quantity cm3/ : 20.0...20.2

100H.: (19.7...20.5)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0
Contr.-rod trav. m: 6.6...7.0
Del.quantity cm3/ : 1.4...2.0
100H.: (1.1...2.3)
Dispersion cm3/ : 0.8
100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250
Sleeve travel mm: 1.30...1.70
2nd speed 1/min: 400
Sleeve travel mm: 3.20...3.60
3rd speed 1/min: 800
Sleeve travel mm: 5.80...6.20
4th speed 1/min: 1000
Sleeve travel mm: 7.90...8.10

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1040
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 850
Charge press. hPa : 1000
Del.quantity cm3/ : 200.0...202.0
1000H.: (197.0...205.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 51...59

Testing:

1st c-rod trav.mm : 11.10
Speed 1/min : 1040...1050
2nd c-rod trav.mm : 4.00
Speed 1/min : 1120...1150
4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 16...24

Testing:

Speed 1/min : 100
C-rod trav.mm min : 8.30
Speed 1/min : 250
C-rod trav.mm : 6.60...7.00

CONSTANT REGULATION

Speed 1/min : 275...385

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600
Pressure hPa : 1000
Contr.-rod trav.mm: 12.10...12.20

Measurement

Speed 1/min : 600
1st pressure hPa : -
C-rod trav.mm : 10.10...10.30
2nd pressure hPa : 430
C-rod trav.mm : 11.60...11.70
3rd pressure hPa : 280
C-rod trav.mm : 10.50...10.70

SWITCH-OVER POINT

Speed 1/min : 200 (0)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -
Speed 1/min : 600
Del.quantity cm3/ : 144.0...146.0
1000H.: (141.0...149.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.10
Speed 1/min : 1040...1050

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 260.0...300.0
1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.60...7.00
Del.quantity cm3/ : 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,7 D3
Edition : 09.10.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 846 842
Injection pump
Pump designation : PE6P120A32ORS3183-1Z
EP type number : 0 411 826 760
Governor
Governor design. : RQ250/1000PA832-1
Governor no. : 0 421 801 387

Customer-spec. information
Customer : DAF

Engine : WS 225

1st version kW : 225.0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 850

Contr.-rod trav.mm: 11.30...11.40

Del.quantity cm3/ : 18.1...18.3

100H.: (17.8...18.6)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 6.6...7.0

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 550

Contr.-rod travelmm: 15.20...16.40

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 850

Charge press. hPa : 1000

Del.quantity cm3/ : 181.0...183.0

1000H.: (178.0...186.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Setting point:

Speed 1/min : 550

Contr.-rod trav.mm: 15.8

Testing:

1st c-rod trav.mm : 10.30

Speed 1/min : 1035...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1120...1150

K15

4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 250

Contr.-rod trav.mm: 6.8

Testing:

Speed 1/min : 100

C-rod trav.mm min : 8.30

Speed 1/min : 250

C-rod trav.mm : 6.60...7.00

C-rod trav.mm : 2.00

Speed 1/min : 335...375

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 850

C-rod trav.mm : 11.50...11.60

2nd speed 1/min : 1000

C-rod trav.mm : 11.40...11.60

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : 1000

Contr.-rod trav.mm: 11.30...11.40

Measurement

Speed 1/min : 600

1st pressure hPa : -

C-rod trav.mm : 10.10...10.30

2nd pressure hPa : 330

C-rod trav.mm : 11.00...11.10

3rd pressure hPa : 260

C-rod trav.mm : 10.50...10.70

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -

Speed 1/min : 600

Del.quantity cm3/ : 144.0...146.0

1000H.: (141.0...149.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.30

Speed 1/min : 1035...1050

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 260.0...300.0
1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.60...7.00
Del.quantity cm3/ : 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : ENA 11,9 C
Edition : 18.09.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : O 401 846 860
Injection pump
Pump designation : PE6P120A320RS3200
EP type number : O 411 826 766
Governor
Governor design. : RQV250...1000PA808-1
Governor no. : O 421 813 660

Customer-spec. information
Customer : ENASA

Engine : 96 R1 BX

1st version kW : 265.0
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 12.00...12.10

Del.quantity cm³/ : 25.6...25.8

100H.: (25.3...26.1)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 3.1...3.5

Del.quantity cm³/ : 1.7...2.3

100H.: (1.4...2.6)

Dispersion cm³/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250

Sleeve travel mm: 1.00...1.40

2nd speed 1/min: 350

Sleeve travel mm: 1.70...2.30

3rd speed 1/min: 700

Sleeve travel mm: 4.70...5.30

4th speed 1/min: 1045

Sleeve travel mm: 8.00...8.20

5th speed 1/min: 1135

Sleeve travel mm: 9.10...9.40

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1090

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 600

Charge press. hPa : 1200

Del.quantity cm³/ : 256.0...258.0

1000H.: (253.0...261.0)

Dispersion cm³/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 42...50

Testing:

1st c-rod trav.mm : 11.00

Speed 1/min : 1040...1050

2nd c-rod trav.mm : 4.00

Speed 1/min : 1120...1150

4th speed 1/min : 1250

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 5...13

Testing:

Speed 1/min : 100

C-rod trav.mm min : 4.80

Speed 1/min : 250

C-rod trav.mm : 3.10...3.50

CONSTANT REGULATION

Speed 1/min : 250...330

Adjustment test, manifold-pressure
compensator (LDA, ADA, ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 1200

Contr.-rod trav.mm: 12.00...12.10

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 8.50...8.90

2nd pressure hPa : 710

C-rod trav.mm : 11.30...11.40

3rd pressure hPa : 410

C-rod trav.mm : 9.50...9.70

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1200

Speed 1/min : 900

Del.quantity cm³/ : 249.0...255.0

1000H.: (246.0...258.0)

Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm3/ : 151.0...153.0
1000H.: (148.0...156.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 11.00
Speed 1/min : 1040...1050

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm3/ : 230.0...260.0
1000H.: (226.0...264.0)

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 3.10...3.50
Del. quantity cm3/ : 17.0...23.0
1000H.: (14.0...26.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : ENA 11,9 E
 Edition : 09.10.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 861
 Injection pump
 Pump designation : PE6P120A32ORS3176-1
 EP type number : 0 411 826 767
 Governor
 Governor design. : RQV250...1050PA808
 Governer no. : 0 421 813 553

Customer-spec. information
 Customer : ENASA

Engine : 96 R1 AX

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)
 Contr.-rod trav.mm: 9.00...12.00

K20

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1030

Contr.-rod trav.mm: 13.40...13.50

Del.quantity cm3/ : 24.8...25.0

100H.: (24.5...25.3)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 250.0

Contr.-rod trav. m: 3.8...4.0

Del.quantity cm3/ : 2.5...3.1

100H.: (2.2...3.4)

Dispersion cm3/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 250
 Sleeve travel mm: 1.00...1.40

2nd speed 1/min: 350
 Sleeve travel mm: 1.70...2.30

3rd speed 1/min: 700
 Sleeve travel mm: 4.50...5.10

4th speed 1/min: 1095
 Sleeve travel mm: 8.20...8.40

5th speed 1/min: 1195
 Sleeve travel mm: 9.40...9.80

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1110

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1030

Charge press. hPa : 900

Del.quantity cm3/ : 248.0...250.0

1000H.: (245.0...253.0)

Dispersion cm3/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 44...52

Testing:
1st c-rod trav.mm : 12.40
Speed 1/min : 1090...1100
2nd c-rod trav.mm : 4.00
Speed 1/min : 1180...1210
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 8...16

Testing:
Speed 1/min : 100
C-rod trav.mm min : 5.50
Speed 1/min : 250
C-rod trav.mm : 3.80...4.00

CONSTANT REGULATION

Speed 1/min : 250...350

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 13.40...13.50

Measurement
Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.80...10.20
2nd pressure hPa : 550
C-rod trav.mm : 12.60...12.70
3rd pressure hPa : 280
C-rod trav.mm : 10.90...11.10

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900
Speed 1/min : 650
Del. quantity cm³/ : 247.0...253.0
1000H.: (244.0...256.0)

Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm³/ : 158.0...160.0
1000H.: (155.0...163.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 12.40
Speed 1/min : 1090...1100

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 160.0...190.0
1000H.: (156.0...194.0)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 12,2 B
 Edition : 16.10.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 846 864
 Injection pump
 Pump designation : PE6P120A32ORS3202
 EP type number : 0 411 826 769
 Governor
 Governor design. : RQV300..1050PA657-22
 Governer no. : 0 421 813 668

Customer-spec. information
 Customer : VOLVO

Engine : TD122K 442

TEST BENCH REQUIREMENTS

Calibrating-gil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3,60...3,70
 : (3,55...3,75)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 14.00...14.10

Del.quantity cm3/ : 25,1...25,3

100H.: (24,8...25,6)

Dispersion cm3/ : 0,5

100H.: (0,9)

2nd speed 1/min: 300,0

Contr.-rod trav. m: 3,7...3,9

Del.quantity cm3/ : 1,7...2,2

100H.: (1,4...2,4)

Dispersion cm3/ : 0,5

100H.: (0,7)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1,50...1,90

2nd speed 1/min: 500

Sleeve travel mm: 4,00...4,60

3rd speed 1/min: 800

Sleeve travel mm: 6,30...6,70

4th speed 1/min: 1110

Sleeve travel mm: 7,80...8,00

5th speed 1/min: 1205

Sleeve travel mm: 8,70...9,10

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1150

Cont.-rod travelmm: 15,20...17,80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa: 900

Del.quantity cm3/ : 251,0...253,0

1000H.: (248,0...256,0)

Dispersion cm3/ : 5,00

1000H.: (9,00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 58...66

Testing:
1st c-rod trav.mm : 13.00
Speed 1/min : 1105...1115
2nd c-rod trav.mm : 4.00
Speed 1/min : 1190...1220
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 5...13

Testing:
Speed 1/min : 100
C-rod trav.mm min : 5.30
Speed 1/min : 300
C-rod trav.mm : 3.70...3.90

CONSTANT REGULATION

Speed 1/min : 300...390

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 14.00...14.10

Measurement
Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 11.50...11.70
2nd pressure hPa : 740
C-rod trav.mm : 13.80...13.90
3rd pressure hPa : 470
C-rod trav.mm : 11.80...12.00

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : -
Speed 1/min : 700
Del.quantity cm3/ : 203.0...205.0
1000H.: (200.0...208.0)

ROTATIONAL-SPEED LIMITATION

K23

1st version
1mm control-rod travel less than

full-load trav.mm: 13.00
Speed 1/min : 1105...1115

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...280.0
1000H.: (236.0...284.0)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 3.70...3.90
Del.quantity cm3/ : 17.0...22.0
1000H.: (14.5...24.5)
Dispersion cm3/ : 5.00
1000H.: (7.00)

Remarks:

:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 12,2 B1
Edition : 16.10.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 846 865
Injection pump
Pump designation : PE6P120A32ORS3202
EP type number : 0 411 826 769
Governor
Governor design. : RQV300..1025PA657-23
Governor no. : 0 421 813 669

Customer-spec. information
Customer : VOLVO

Engine : TD122A 35

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3,60...3,70
: (3,55...3,75)

Contr.-rod trav.mm: 9,00...12,00

Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 11.90...12.00

Del.quantity cm³/ : 20.8...21.0

100H.: (20.5...21.3)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 3.9...4.1

Del.quantity cm³/ : 2.1...2.6

100H.: (1.8...2.8)

Dispersion cm³/ : 0.5

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.50...1.90

2nd speed 1/min: 500

Sleeve travel mm: 4.20...4.80

3rd speed 1/min: 800

Sleeve travel mm: 6.30...6.70

4th speed 1/min: 1080

Sleeve travel mm: 8.30...8.50

5th speed 1/min: 1150

Sleeve travel mm: 9.50...9.90

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1080

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm³/ : 208.0...210.0

1000H.: (205.0...213.0)

Dispersion cm³/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 58...66

Testing:

1st c-rod trav.mm : 10.90
Speed 1/min : 1080...1090
2nd c-rod trav.mm : 4.00
Speed 1/min : 1140...1170
4th speed 1/min : 1250
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 5...13

Testing:

Speed 1/min : 100
C-rod trav.mm min : 5.50
Speed 1/min : 300
C-rod trav.mm : 3.90...4.10

CONSTANT REGULATION

Speed 1/min : 300...390

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500
Pressure hPa : 900
Contr.-rod trav.mm: 11.90...12.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 11.50...11.70
2nd pressure hPa : 450
C-rod trav.mm : 11.70...11.80

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : -
Speed 1/min : 700
Del.quantity cm³/ : 203.0...205.0
1000H.: (200.0...208.0)

ROTATIONAL-SPEED LIMITATION

1st version

K25

1mm control-rod travel less than

full-load trav.mm: 10.90
Speed 1/min : 1080...1090

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 240.0...280.0
1000H.: (236.0...284.0)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 3.90...4.10
Del.quantity cm³/ : 21.0...26.0
1000H.: (18.5...28.5)
Dispersion cm³/ : 5.00
1000H.: (7.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 A 3
 Edition : 18.09.87
 Superceeded : 5.85
 Calibrating oil : ISO-4113
 Combination no. : 0 401 848 756
 Injection pump
 Pump designation : PE8P110A32OLS3802-10
 EP type number : 0 411 816 710
 Governor
 Governor design. : RQV300...1150PA486-3
 Govenner no. : 0 421 813 411

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM422

1st version kW : 184.0
 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.00...11.10

Del.quantity cm3/ : 11.3...11.5

100H.: (11.0...11.7)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.4...8.6

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.60...1.80

2nd speed 1/min: 800

Sleeve travel mm: 5.80...6.20

3rd speed 1/min: 1200

Sleeve travel mm: 8.20...8.40

4th speed 1/min: 260

Sleeve travel mm: 9.60...10.40

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1230

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Del.quantity cm3/ : 113.0...115.0

1000H.: (110.5...117.5)

Dispersion cm³/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 50...58

Testing:
1st c-rod trav.mm : 10.00
Speed 1/min : 1190...1200
2nd c-rod trav.mm : 4.00
Speed 1/min : 1240...1270
4th speed 1/min : 1400
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26

Testing:
Speed 1/min : 100
C-rod trav.mm min : 9.70
Speed 1/min : 300
C-rod trav.mm : 8.00...8.20
C-rod trav.mm : 2.00
Speed 1/min : 410...480

TORQUE CONTROL

Dimension a mm : 0.20
Torque-control curve - 1st version
1st speed 1/min : 1150
C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 600
C-rod trav.mm : 11.20...11.40

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version
Speed 1/min : 600
Del.quantity cm³/ : 92.0...96.0
1000H.: (89.0...99.0)
Dispersion cm³/ : 6.00
1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 10.00
Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 D 1
Edition : 18.09.87
Superceeded :
Calibrating oil : ISO-4113
Combination no. : 0 401 848 782
Injection pump
Pump designation : PE8P110A32OLS3842
EP type number : 0 411 818 714
Governor
Governor design. : RGV300...950PA829-1K
Governor no. : 0 421 815 167

Customer-spec. information

Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 206.0
Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness : 6.00x1.50x600
x Length mm

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 950

Contr.-rod trav.mm: 13.50...13.60

Del.quantity cm³/ : 13.3...13.5
 100H.: (13.0...13.7)

Dispersion cm³/ : 0.4
 100H.: (0.8)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 8.8...9.0
Del.quantity cm³/ : 1.5...2.1
 100H.: (1.2...2.3)
Dispersion cm³/ : 0.4
 100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 1.10...1.30
2nd speed 1/min: 500
Sleeve travel mm: 3.20...3.40
3rd speed 1/min: 800
Sleeve travel mm: 5.90...6.10
4th speed 1/min: 1000
Sleeve travel mm: 8.00...8.40
5th speed 1/min: 1050
Sleeve travel mm: 9.50...10.00

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 975
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 950

Del.quantity cm³/ : 133.0...135.0
 1000H.: (130.5...137.5)
Dispersion cm³/ : 4.00
 1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 57...65

Testing:
1st c-rod trav.mm : 12.50
Speed 1/min : 990...1000
2nd c-rod trav.mm : 4.00
Speed 1/min : 1045...1075
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 14...22

Testing:
Speed 1/min : 100
C-rod trav.mm min : 10.50
Speed 1/min : 300
C-rod trav.mm : 8.80...9.00

CONSTANT REGULATION

Speed 1/min : 300...450

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 950
C-rod trav.mm : 13.50...13.60
2nd speed 1/min : 600
C-rod trav.mm : 12.90...13.10
3rd speed 1/min : 750
C-rod trav.mm : 13.20...13.40

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version
Speed 1/min : 600
Del.quantity cm³/ : 118.0...121.0
 1000H.: (115.0...124.0)
Dispersion cm³/ : 6.00
 1000H.: (9.00)
Speed 1/min : 750
Del.quantity cm³/ : 124.0...128.0
 1000H.: (121.0...131.0)
Dispersion cm³/ : 6.00
 1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 12.50
Speed 1/min : 990...1000

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 C 4
Edition : 09.10.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 401 848 789
Injection pump
Pump designation : PE8P110A32OLS3842-1
EP type number : 0 411 818 716
Governor
Governor design. : RQ300/1050PA827-3K
Governor no. : 0 421 803 095

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 213.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 12.90...13.00

Del.quantity cm³/ : 13.2...13.4

100H.: (12.9...13.6)

Dispersion cm³/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.8...9.0

Del.quantity cm³/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm³/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 1.30...1.50

2nd speed 1/min: 500
Sleeve travel mm: 5.50...5.70

3rd speed 1/min: 900
Sleeve travel mm: 6.90...7.20

4th speed 1/min: 1050
Sleeve travel mm: 7.60...7.90

5th speed 1/min: 1100
Sleeve travel mm: 10.10...10.60

SLEEVE POSITION

Control-lever position
Degree: -2
Speed 1/min: 600
Contr.-rod travelmm: 14.70...15.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1050

Del.quantity cm³/ : 132.0...134.0
1000H.: (129.5...136.5)

Dispersion cm³/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 40...48

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 15.2

Testing:
1st c-rod trav.mm : 11.90
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1150...1180
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 8.9

Testing:
Speed 1/min : 200
C-rod trav.mm min : 10.50
Speed 1/min : 300
C-rod trav.mm : 8.80...9.00
C-rod trav.mm : 2.00
Speed 1/min : 450...490
Speed 1/min : 550
C-rod trav.mm max : 1.80

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1050
C-rod trav.mm : 12.90...13.00
2nd speed 1/min : 600
C-rod trav.mm : 12.50...13.00
3rd speed 1/min : 750
C-rod trav.mm : 13.20...13.40

FUEL-DELIVERY CHARACTERISTICS

1st version
Speed 1/min : 600
Del.quantity cm³/ : 119.0...122.0
1000H.: (116.0...125.0)
Dispersion cm³/ : 8.00
1000H.: (11.)
Speed 1/min : 900
Del.quantity cm³/ : 130.0...134.0
1000H.: (127.0...137.0)
Dispersion cm³/ : 8.00

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.90
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 18,3 D 1
Edition : 18.09.87
Superceeded : 13.5.87
Calibrating oil : ISO-4113

Combination no. : 0 401 849 709

Injection pump
Pump designation : PE10P110A32OLS3818-1
EP type number : 0 411 819 703
Governor
Governor design. : RQV350...1150PA678
Governor no. : 0 421 813 402

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 423

1st version kW : 261.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 10- 9- 4- 1- 8- 7
 - 6- 3- 5- 2

SD ang. spacing^oCS: 0-45-72-117-144-189-
 216-261-288-333
Tolerance + - ^o : 0.50 (0.75)

SD mark cyl. no. : 10

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav.mm: 11.80...11.90

Del.quantity cm³/ : 12.6...12.8
 100H.: (12.3...13.0)

Dispersion cm³/ : 0.4
 100H.: (0.8)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 8.0...8.5
Del.quantity cm³/ : 1.4...2.2
 100H.: (1.1...2.4)
Dispersion cm³/ : 0.4
 100H.: (0.7)

SLEEVE POSITION

Speed 1/min: 1200
Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1150
Del.quantity cm³/ : 126.0...128.0
 1000H.: (123.5...130.5)
Dispersion cm³/ : 4.00
 1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 60...68

Testing:
1st c-rod trav.mm : 10.80
Speed 1/min : 1190...1200
2nd c-rod trav.mm : 4.00
Speed 1/min : 1240...1270
4th speed 1/min : 1400

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 10...18

Testing:

Speed 1/min : 100
C-rod trav.mm min : 10.00
Speed 1/min : 350
C-rod trav.mm : 8.00...8.50

CONSTANT REGULATION

Speed 1/min : 350...500

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1150
C-rod trav.mm : 11.80...11.90
2nd speed 1/min : 600
C-rod trav.mm : 12.50...12.70
3rd speed 1/min : 900
C-rod trav.mm : 12.30...12.50

SWITCH-OVER POINT

Speed 1/min : 270 (290)

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 600
Del.quantity cm³/ : 116.0...120.0
 1000H.: (113.0...123.0)
Dispersion cm³/ : 6.00
 1000H.: (9.00)
Speed 1/min : 900
Del.quantity cm³/ : 122.0...127.0
 1000H.: (119.0...130.0)
Dispersion cm³/ : 6.00
 1000H.: (9.00)
Speed 1/min : 1150
Del.quantity cm³/ : 92.0...94.0 *
 1000H.: (89.0...97.0)
Dispersion cm³/ : 6.00
 1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.80
Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 150.0...170.0
1000H.: (146.0...174.0)

Remarks:

:

* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 18,3 K
Edition : 09.10.87
Superceeded :
Calibrating oil : ISO-4113
Combination no. : 0 401 849 737
Injection pump
Pump designation : PE10P110A32OLS3844
EP type number : 0 411 819 710
Governor
Governor design. : RQ300/1050PA827-5K
Governor no. : 0 421 803 097

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 443

1st version kW : 265.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 10- 9- 4- 1- 8- 7-
 6- 3- 5- 2

SD ang. spacing^oCS: 0-45-72-117-144-189-
 216-261-288-333

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 10

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 12.90...13.00

Del.quantity cm³/ : 13.3...13.5

100H.: (13.0...13.7)

Dispersion cm³/ : 0.4

100H.: (0.8)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.9...8.1

Del.quantity cm³/ : 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm³/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.60...1.80

2nd speed 1/min: 500

Sleeve travel mm: 5.50...5.70

3rd speed 1/min: 900

Sleeve travel mm: 7.00...7.30

4th speed 1/min: 1050

Sleeve travel mm: 7.60...7.90

5th speed 1/min: 1100

Sleeve travel mm: 9.50...10.00

SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Cont.-rod travelmm: 14.70...15.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1050

Del. quantity cm³/ : 133.0...135.0
1000H.: (130.5...137.5)
Dispersion cm³/ : 4.00
1000H.: (8.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 32...40

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 14.8

Testing:
1st c-rod trav.mm : 11.90
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1160...1190
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 8.0

Testing:
Speed 1/min : 200
C-rod trav.mm min : 9.30
Speed 1/min : 300
C-rod trav.mm : 7.90...8.10
C-rod trav.mm : 2.00
Speed 1/min : 390...430
Speed 1/min : 550
C-rod trav.mm max : 1.80

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1050
C-rod trav.mm : 12.90...13.00
2nd speed 1/min : 600
C-rod trav.mm : 12.80...13.00
3rd speed 1/min : 900
C-rod trav.mm : 13.20...13.40

FUEL-DELIVERY CHARACTERISTICS

1st version
Speed 1/min : 600
Del. quantity cm³/ : 119.0...122.0
1000H.: (116.0...125.0)
Dispersion cm³/ : 6.00
1000H.: (9.00)
Speed 1/min : 900
Del. quantity cm³/ : 127.0...131.0
1000H.: (124.0...134.0)

Dispersion cm³/ : 6.00
1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.90
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 Q 7
Edition : 09.10.87
Superceeded : 21.8.87
Calibrating oil : ISO-4113

Combination no. : 0 401 876 753

Injection pump
Pump designation : PE6P120A32OLS3815-10
EP type number : 0 411 826 735
Governor
Governor design. : RSV750...1150P1A820-
6
Governor no. : 0 421 833 227

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM421A

1st version kW : 184.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing^oCS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 1180

Contr.-rod trav.mm: 10.70...10.80

Del.quantity cm3/ : 15.7...15.9
 100H.: (15.4...16.2)

Dispersion cm3/ : 0.5
 100H.: (0.9)

2nd speed 1/min: 750.0
Contr.-rod trav. m: 3.4...3.6
Del.quantity cm3/ : 1.8...2.4
 100H.: (1.5...2.7)
Dispersion cm3/ : 0.8
 100H.: (1.2)

SLEEVE POSITION

Control-lever position
 Degree: -3
Speed 1/min: 800
Contr.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1180
Del.quantity cm3/ : 157.0...159.0
 1000H.: (154.0...162.0)
Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
 position degrees: 56...64

Testing:
1st c-rod trav.mm : 9.70

Speed 1/min : 1210...1220
2nd c-rod trav.mm : 4.00
Speed 1/min : 1240...1260
4th speed 1/min : 1350
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
 position degrees: 32...40
Setting point w/out aux. spring
Speed 1/min : 750
Contr.-rod trav.mm: 3.4
Speed 1/min : 750
C-rod trav.mm : 3.30...3.50
C-rod trav.mm : 2.00
Speed 1/min : 755...815

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1180
 C-rod trav.mm : 10.70...10.80
2nd speed 1/min : 950
 C-rod trav.mm : 11.20...11.40
3rd speed 1/min : 1075
 C-rod trav.mm : 11.00...11.20

FUEL-DELIVERY CHARACTERISTICS

1st version
Speed 1/min : 975
Del.quantity cm3/ : 168.0...172.0
 1000H.: (165.0...175.0)
Dispersion cm3/ : 8.00
 1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
 full-load trav.mm: 9.70
Speed 1/min : 1210...1220

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 150.0...170.0
 1000H.: (146.0...174.0)

Remarks: :

When adjusting and checking, adjust
speed regulation to 1210...1220 l/min.
Afterwards, readjust speed regulation
to 1160...1170 l/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 K 2
 Edition : 26.06.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 876 758
 Injection pump
 Pump designation : PE6P110A32OLS3814-10
 EP type number : 0 411 816 741
 Governor
 Governor design. : RSV350..750POA531
 Governor no. : 0 421 833 269

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM421

1st version kW : 116.0
 Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing^oCS: 0-45-120-165-240-285
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.20...13.30

Del.quantity cm³/ : 13.9...14.1

100H.: (13.6...14.3)

Dispersion cm³/ : 0.4

100H.: (0.8)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 8.2...8.4

Del.quantity cm³/ : 1.3...1.9

100H.: (1.0...2.1)

Dispersion cm³/ : 0.4

100H.: (0.7)

SLEEVE POSITION

Control-lever position

Degree: 3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 2.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm³/ : 139.0...141.0

1000H.: (136.5...143.5)

Dispersion cm³/ : 4.00

1000H.: (8.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 22...30

Testing:

1st c-rod trav.mm : 12.10

Speed 1/min : 750...755

2nd c-rod trav.mm : 4.00
Speed 1/min : 780...793

LOWEST RATED SPEED I

Control-lever
position degrees: 10...18
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 8.3
Speed 1/min : 350
C-rod trav.mm : 8.20...8.40

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:

:

Before adjusting the full-load
delivery, set control rod to 14.5...
15.0 mm travel with full-load adjusting
screw in governor cover. Full-load
adjustment with adjusting screw on
governor housing.
Observe VDT-I-420/120

0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 K 4
 Edition : 18.09.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 876 758
 Injection pump
 Pump designation : PE6P110A320LS3814-11
 EP type number : 0 411 816 756
 Governor
 Governor design. : RSV350..750POAS31
 Govenner no. : 0 421 833 269

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM421

1st version kW : 116.0
 Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant,
 per values -----

START OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing^oCS: 0-45-120-165-240-285
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13.20...13.30

Del.quantity cm3/ : 13.9...14.1
 100H.: (13.6...14.3)

Dispersion cm3/ : 0.4
 100H.: (0.8)

2nd speed 1/min: 350.0
 Contr.-rod trav. m: 8.2...8.4
 Del.quantity cm3/ : 1.3...1.9
 100H.: (1.0...2.1)
 Dispersion cm3/ : 0.4
 100H.: (0.7)

SLEEVE POSITION

Control-lever position
 Degree: 3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...1.00

Governor-spring reload
 Notch setting x : 2.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 700
 Del.quantity cm3/ : 139.0...141.0
 1000H.: (136.5...143.5)
 Dispersion cm3/ : 4.00
 1000H.: (8.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 22...30

Testing:
 1st c-rod trav.mm : 12.10
 Speed 1/min : 750...755

2nd c-rod trav.mm : 4.00
Speed 1/min : 780...793

LOWEST RATED SPEED I

Control-lever
position degrees: 10...18
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 8.3
Speed 1/min : 350
C-rod trav.mm : 8.20...8.40

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:

:

Before adjusting the full-load
delivery, set control rod to 14.5...
15.0 mm travel with full-load adjusting
screw in governor cover. Full-load
adjustment with adjusting screw on
governor housing.
Observe VDT-I-420/120

0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 K 3
 Edition : 19.10.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 401 876 759
 Injection pump
 Pump designation : PE6P110A32OLS3814-10
 EP type number : 0 411 816 741
 Governor
 Governor design. : RSV350...10S0POA531-
 1
 Govenner no. : 0 421 833 271
 Customer-spec. information
 Customer : DAIMLER-BENZ
 Engine : OM421
 1st version kW : 148,0
 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Overflow
 quantity min. 1/h: 100...120
 Calibrating nozzle-holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test inj. tubing : 1 680 750 015
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Contr.-rod trav.mm: 9.00...12.00
 Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing°CS: 0-45-120-165-240-285
 Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 1030

 Contr.-rod trav.mm: 12.20...12.30

 Del.quantity cm3/ : 13.0...13.2

 100H.: (12.7...13.4)

 Dispersion cm3/ : 0.4

 100H.: (0.8)

2nd speed 1/min: 350.0
 Contr.-rod trav. m: 8.2...8.4
 Del.quantity cm3/ : 1.3...1.9
 100H.: (1.0...2.1)
 Dispersion cm3/ : 0.4
 100H.: (0.7)

SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed 1/min: 800
 Cont.-rod travelmm: 0.30...1.00

Governor-spring reload
 Notch setting x : 3.25

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1030
 Del.quantity cm3/ : 130.0...132.0
 1000H.: (127.5...134.5)
 Dispersion cm3/ : 4.00
 1000H.: (8.00)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 36...44

Testing:
 1st c-rod trav.mm : 11.10

Speed 1/min : 1065...1075
2nd c-rod trav.mm : 4.00
Speed 1/min : 1130...1150
4th speed 1/min : 1350
C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever
position degrees: 14...22
Speed 1/min : 350
C-rod trav.mm : 8.20...8.40

SET IDLE AUXILIARY SPRING

Speed 1/min : 2.00

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 600
Del.quantity cm3/ : 112.0...116.0
1000H.: (109.0...119.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.10
Speed 1/min : 1065...1075

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:

:

Before adjusting the full-load
delivery, set control rod to 14.5...
15.0 mm travel with full-load adjusting
screw in governor cover. Full-load
adjustment with adjusting screw on
governor housing.
Observe VDT-I-420/120

0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 10,0 A
Edition : 18.09.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 035 020
Injection pump
Pump designation : PES5P120A720/3LSS12
EP type number : 0 412 025 021
Governor
Governor design. : RQ300/1100PA813-1
Governor no. : 0 421 801 405

Customer-spec. information
Customer : MAN

Engine : D2865LF/260

1st version kW : 191,0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6,00X1,50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 3- 5- 4- 2

SD ang. spacing⁰CS: 0-72-144-216-288
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 750

Contr.-rod trav.mm: 10.70...10.80

Del.quantity cm³/ : 20.9...21.1

100H.: (20.6...21.4)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 5.2...5.4

Del.quantity cm³/ : 1.2...1.8

100H.: (0.9...2.1)

Dispersion cm³/ : 0.8

100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 750

Charge press. hPa : 1000

Del.quantity cm³/ : 209.0...211.0

1000H.: (206.0...214.0)

Dispersion cm³/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 9.00

Speed 1/min : 1145...1160

2nd c-rod trav.mm : 4.00
Speed 1/min : 1180...1210
4th speed 1/min : 1350
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 5.3

Testing:

Speed 1/min : 100
C-rod trav.mm min : 6.80
Speed 1/min : 300
C-rod trav.mm : 5.20...5.40

TORQUE CONTROL

Dimension a mm : 0.30
Torque-control curve - 1st version
1st speed 1/min : 750
C-rod trav.mm : 10.70...10.80
2nd speed 1/min : 1100
C-rod trav.mm : 10.00...10.10
3rd speed 1/min : 920
C-rod trav.mm : 10.40...10.60

Adjustment test, manifold-pressure
compensator (LDA, ADA, ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 1000
Contr.-rod trav.mm: 10.00...10.10

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav,mm : 8.40...8.50
2nd pressure hPa : 200
C-rod trav,mm : 8.70...8.80
3rd pressure hPa : 460
C-rod trav,mm : 10.00...10.30

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press, hPa : 1000
Speed 1/min : 1100
Del.quantity cm3/ : 193.0...197.0
1000H.: (190.0...200.0)
Charge press, hPa : 1000
Speed 1/min : 650

Del.quantity cm3/ : 198.0...204.0
1000H.: (195.0...207.0)
Charge press, hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 135.0...137.0
1000H.: (132.0...140.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 9.00
Speed 1/min : 1145...1160

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 225.0...245.0
1000H.: (221.0...249.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 5.20...5.40
Del.quantity cm3/ : 12.0...18.0
1000H.: (9.0...21.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 10,0 B
Edition : 18.09.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 035 021

Injection pump
Pump designation : PESSP120A720/3LS512
EP type number : 0 412 025 021
Governor
Governor design. : RQV300...1100PA876
Governor no. : 0 421 813 661

Customer-spec. information
Customer : MAN

Engine : D286SLF/260

1st version kW : 191,0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 3- 5- 4- 2

SD ang. spacing^oCS: 0-72-144-216-288
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 750

Contr.-rod trav.mm: 10.70...10.80

Del.quantity cm³/ : 20.9...21.1

100H.: (20.6...21.4)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 5.2...5.4

Del.quantity cm³/ : 1.2...1.8

100H.: (0.9...2.1)

Dispersion cm³/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.70...2.00

2nd speed 1/min: 850

Sleeve travel mm: 6.00...6.20

3rd speed 1/min: 1100

Sleeve travel mm: 8.10...8.30

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1130

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 750

Charge press. hPa : 1000

Del.quantity cm³/ : 209.0...211.0

1000H.: (206.0...214.0)

Dispersion cm³/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Control-lever
position degrees: 49...57

Testing:

1st c-rod trav.mm : 9.00

Speed 1/min : 1140...1150

2nd c-rod trav.mm : 4.00

Speed 1/min : 1215...1245

4th speed 1/min : 1350

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 14...22

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.80

Speed 1/min : 300

C-rod trav.mm : 5.20...5.40

CONSTANT REGULATION

Speed 1/min : 310...410

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 750

C-rod trav.mm : 10.70...10.80

2nd speed 1/min : 1100

C-rod trav.mm : 10.00...10.10

3rd speed 1/min : 900

C-rod trav.mm : 10.40...10.50

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 1000

Contr.-rod trav.mm: 10.00...10.10

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 8.40...8.50

2nd pressure hPa : 200

C-rod trav.mm : 8.70...8.80

3rd pressure hPa : 460

C-rod trav.mm : 10.00...10.30

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1000
Speed 1/min : 1100
Del. quantity cm³/ : 193.0...197.0
1000H.: (190.0...200.0)
Charge press. hPa : 1000
Speed 1/min : 650
Del. quantity cm³/ : 198.0...204.0
1000H.: (195.0...207.0)
Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm³/ : 135.0...137.0
1000H.: (132.0...140.0)

ROTATIONAL-SPEED LIMITATION

1st version

Imm control-rod travel less than

full-load trav.mm: 9.00
Speed 1/min : 1140...1150

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 225.0...245.0
1000H.: (221.0...249.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 5.20...5.40
Del. quantity cm³/ : 12.0...18.0
1000H.: (9.0...21.0)
Dispersion cm³/ : 8.00
1900H.: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MAN 11,9A24
Edition : 18.09.87
Superceeded : 31.7.87
Calibrating oil : ISO-4113

Combination no. : 0 402 036 062

Injection pump
Pump designation : PES6P120A720/3LS470-
2

EP type number : 0 412 026 050

Governor

Governor design. : RQ300/1100PA813

Governer no. : 0 421 801 358

Customer-spec. information

Customer : MAN

Engine : D2866LF

1st version kW : 243.0
Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 6- 2- 4- 1- 5- 3

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 750

Contr.-rod trav.mm: 11.30...11.40

Del.quantity cm³/ : 20.7...20.9

100H.: (20.4...21.2)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav, m: 4.7...4.9

Del.quantity cm³/ : 1.2...1.8
100H.: (0.9...2.1)

Dispersion cm³/ : 0.8
100H.: (1.2)

SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 750

Charge press. hPa : 1000

Del.quantity cm³/ : 207.0...209.0
1000H.: (204.0...212.0)

Dispersion cm³/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 9.70

L26

Speed 1/min : 1145...1160

2nd c-rod trav.mm : 4.00

Speed 1/min : 1180...1210

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 4.8

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.30

Speed 1/min : 300

C-rod trav.mm : 4.70...4.90

C-rod trav.mm : 2.00

Speed 1/min : 340...380

TORQUE CONTROL

Dimension a mm : 0.50

Torque-control curve - 1st version

1st speed 1/min : 750

C-rod trav.mm : 12.00...12.30

2nd speed 1/min : 1100

C-rod trav.mm : 10.70...10.80

3rd speed 1/min : 900

C-rod trav.mm : 11.70...11.90

4th speed 1/min : 975

C-rod trav.mm : 11.00...11.30

Adjustment test, manifold-pressure
compensator (LDA, ADA, ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 1000

Contr.-rod trav.mm: 11.30...11.40

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 8.90...9.10

2nd pressure hPa : 85

C-rod trav.mm : 9.30...9.40

3rd pressure hPa : 280

C-rod trav.mm : 10.50...10.90

SWITCH-OVER POINT

Speed 1/min : 190 (210)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1000

Speed 1/min : 1100
Del.quantity cm3/ : 203.0...207.0
1000H.: (200.0...210.0)
Charge press. hPa : 1000
Speed 1/min : 650
Del.quantity cm3/ : 206.0...212.0
1000H.: (203.0...215.0)
Charge press. hPa : 80
Speed 1/min : 500
Del.quantity cm3/ : 184.0...196.0
1000H.: (181.0...199.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 132.0...134.0
1000H.: (129.0...137.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 9.70
Speed 1/min : 1145...1160

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 225.0...245.0
1000H.: (221.0...249.0)

LOW IDLE

Speed 1/min : 300
Contr.-rod trav.mm: 4.70...4.90
Del.quantity cm3/ : 12.0...18.0
1000H.: (9.0...21.0)
Dispersion cm3/ : 8.00
1000H.: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : ALO 13,8 A1
Edition : 14.10.87
Superceeded : 7.86
Calibrating oil : ISO-4113

Combination no. : 0 402 046 202

Injection pump
Pump designation : PES6P120A320RS410
Governor
Governor design. : RQV300...875PA498K

Customer-spec. information
Customer : ALLIS CHALMERS

Engine : 6138 LT

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.5

Calibrating nozzle-holder
assembly : 0 681 443 022

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 060

Outside diameter
x Wall thickness
x Length mm : 8,00x2,00x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Contr.-rod trav. mm : 10.50
Cam sequence : 1-5-3-6-2-4

SD ang. spacing °CS : 0-60-120-180-240-300
Tolerance + - : 0,5 (0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 875

Contr.-rod trav.mm: 8,7

Del.quantity cm3/ : 16,1...16,3

100H.: (-)

Dispersion cm3/ : 0,50

100H.: (-)

2nd speed 1/min: 300

Contr.-rod trav. m: 5,2

Del.quantity cm3/ : 1,8...2,4

100H.: (-)

Dispersion cm3/ : 1,0

100H.: (-)

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 900

Contr.-rod travelmm: 15,2...17,8

Governor-spring reload

Notch setting x : -

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 875

Del.quantity cm3/ : 161,0...163,0

1000H.: (157,0...167,0)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 58...66

Testing:

1st c-rod trav.mm : 7,7

Speed 1/min : 915...925

2nd c-rod trav.mm : 4,0

Speed 1/min : 945...975

4th speed 1/min : 900

C-rod trav.mm : 0..1,0

LOWEST RATED SPEED I

Control-lever

position degrees: 8...16

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 5,1...5,3

Testing:

Speed 1/min : 100

C-rod trav.mm min : 7,9

C-rod trav.mm : 2,0

Speed 1/min : 440...500

Speed 1/min : 550

C-rod trav.mm max : 1,0

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 875

C-rod trav.mm : 8,70

2nd speed 1/min : 600

C-rod trav.mm : 8,75...8,85

SWITCH-OVER POINT

Speed 1/min : 180...240

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 600

Del.quantity cm3/ : 144,5...148,5

1000H.: (140,5...152,5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 7,7

Speed 1/min : 915...925

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/ : 130,0...170,0

1000H.: (-)

LOW IDLE

Speed 1/min : 300

Del.quantity cm3/ : 18,0...24,0

1000H.: (-)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : RVI 9,8 C
Edition : 09.10.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 046 331
Injection pump
Pump designation : PES6P120A32ORSS14
EP type number : 0 412 026 052
Governor
Governor design. : RQV275...1000PA495-9
Governor no. : 0 421 813 672

Customer-spec. information
Customer : RVI

Engine : MIDR062045 K

1st version kW : 176.5
Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values:
Insp. values in parentheses
Set constant delivery quant,
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 10.00...11.00

BASIC SETTING

1st speed 1/mi: 550

Del.quantity cm3/ : 17.1...17.3

100H.: (16.8...17.6)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 275.0

Contr.-rod trav. m: 6.1...6.3

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 275

Sleeve travel mm: 1.40...1.60

2nd speed 1/min: 500

Sleeve travel mm: 3.80...4.30

3rd speed 1/min: 800

Sleeve travel mm: 5.70...6.10

4th speed 1/min: 1000

Sleeve travel mm: 7.20...7.40

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1120

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 550

Charge press. hPa : 1000

Del.quantity cm3/ : 171.0...173.0

1000H.: (168.0...176.0)

Dispersion cm³/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 60...68

Testing:
1st c-rod trav.mm : 9.10
Speed 1/min : 1065...1075
2nd c-rod trav.mm : 4.00
Speed 1/min : 1165...1195
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 7...15

Testing:
Speed 1/min : 200
C-rod trav.mm min : 7.20
Speed 1/min : 275
C-rod trav.mm : 5.30...5.50

CONSTANT REGULATION

Speed 1/min : 300...405

TORQUE CONTROL

Dimension a mm : 1.50
Torque-control curve - 1st version
1st speed 1/min : 550
C-rod trav.mm : 11.60...11.70
2nd speed 1/min : 1000
C-rod trav.mm : 10.00...10.10
3rd speed 1/min : 700
C-rod trav.mm : 11.20...11.30
4th speed 1/min : 850
C-rod trav.mm : 10.40...10.70

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 1000
Contr.-rod trav.mm: 11.60...11.70

Measurement

Speed 1/min : 500

1st pressure hPa : -
C-rod trav.mm : 9.00...9.20
2nd pressure hPa : 360
C-rod trav.mm : 11.20...11.30
3rd pressure hPa : 160

M04

C-rod trav.mm : 9.60...9.90

SWITCH-OVER POINT

Speed 1/min : 195 (215)

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 1000
Speed 1/min : 1000
Del.quantity cm³/ : 160.0...164.0
1000H.: (157.0...167.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm³/ : 105.0...107.0
1000H.: (102.0...110.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 9.10
Speed 1/min : 1065...1075

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm³/ : 140.0...160.0
1000H.: (140.0...160.0)

LOW IDLE

Speed 1/min : 275
Contr.-rod trav.mm: 5.30...5.50
Del.quantity cm³/ : 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm³/ : 8.00
1000H.: (12.00)

Remarks:

:
Start-of-delivery mark 10.5° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 9,6 Q
Edition : 09.10.87
Superceeded : 12.9.86
Calibrating oil : ISO-4113
Combination no. : 0 402 046 761
Injection pump
Pump designation : PES6P110A72ORS3104
EP type number : 0 412 016 712
Governor
Governor design. : RQV300...1150PA549-2
Governor no. : 0 421 813 491

Customer-spec. information
Customer : KHD

Engine : BF6L413FRC

1st version kW : 210.0
Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Contr.-rod trav. mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

MOS

SD ang. spacing°CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1150

Contr.-rod trav. mm: 14.60...14.70

Del. quantity cm3/ : 18.4...18.6

100H.: (18.1...18.9)

Dispersion cm3/ : 0.4

100H.: (0.7)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.8...8.0

Del. quantity cm3/ : 1.6...2.2

100H.: (1.3...2.4)

Dispersion cm3/ : 0.4

100H.: (0.7)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.10...1.50

2nd speed 1/min: 400

Sleeve travel mm: 2.50...3.00

3rd speed 1/min: 600

Sleeve travel mm: 3.80...4.30

4th speed 1/min: 1200

Sleeve travel mm: 8.40...8.60

5th speed 1/min: 1330

Sleeve travel mm: 9.80...10.20

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1170

Cont.-rod travel mm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1150

Charge press. hPa : 900

Del. quantity cm3/ : 184.0...186.0

1000H.: (181.0...189.0)

Dispersion cm3/ : 4.00

1000H.: (7.50)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 51...59

Testing:
1st c-rod trav.mm : 13.60
Speed 1/min : 1190...1200
2nd c-rod trav.mm : 4.00
Speed 1/min : 1320...1350
4th speed 1/min : 1450
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I
Control-lever
position degrees: 17...25

Testing:
Speed 1/min : 100
C-rod trav.mm min : 9.30
Speed 1/min : 300
C-rod trav.mm : 7.80...8.00

CONSTANT REGULATION
Speed 1/min : 300...480

TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1150
C-rod trav.mm : 14.60...14.70
2nd speed 1/min : 700
C-rod trav.mm : 14.80...14.90

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version
Setting
Speed 1/min : 450
Pressure hPa : 900
Contr.-rod trav.mm: 14.80...14.90

Measurement
Speed 1/min : 450

1st pressure hPa : -
C-rod trav.mm : 12.40...12.50
2nd pressure hPa : 500
C-rod trav.mm : 13.90...14.00
3rd pressure hPa : 360
C-rod trav.mm : 12.70...12.90

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 900
Speed 1/min : 700
Del.quantity cm3/ : 189.0...193.0
1000H.: (186.0...196.0)
Charge press. hPa : -
Speed 1/min : 450
Del.quantity cm3/ : 123.0...125.0
1000H.: (120.0...128.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 13.60
Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 135.0...155.0
1000H.: (131.0...159.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : ROL 12,2 I1
 Edicion : 09.10.87
 Superceeded : -
 Calibrating oil : ISO-4113
 Combination no. : 0 402 046 779
 Injection pump
 Pump designation : PES6P120A32ORS3170-1
 EP type number : 0 412 026 726
 Governor
 Governor design. : RQ750PA826-1
 Governer no. : 0 421 801 366

Customer-spec. information
 Customer : PERKINS

Engine : EAGLE LE

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Calibrating nozzle-holder
 assembly : 1 688 901 019
 Opening
 pressure, bar : 207...210
 Perforated-plate
 diameter mm : 0,8
 Test inj. tubing : 1 680 750 067
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Contr.-rod trav.mm: 9.00...12.00

M07

Cam sequence : 1- 4- 2- 6- 3- 5

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

 Contr.-rod trav.mm: 13.10...13.20

 Del.quantity cm3/ : 21.2...21.4

 100H.: (20.9...21.7)

 Dispersion cm3/ : 0.5

 100H.: (0.9)

2nd speed 1/min: 250.0
 Contr.-rod trav. m: 5.9...6.1
 Del.quantity cm3/ : 1.7...2.3
 100H.: (1.4...2.6)
 Dispersion cm3/ : 0.8
 100H.: (1.2)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 700
 Del.quantity cm3/ : 212.0...214.0
 1000H.: (209.0...217.0)
 Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version
 Testing:
 1st c-rod trav.mm : 12.10
 Speed 1/min : 750...755
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 776...789
 4th speed 1/min : 900
 C-rod trav.mm : 0.00...1.00

SWITCH-OVER POINT

Speed 1/min : 690 (0)

ROTATIONAL-SPEED LIMITATION

1st version

Imm control-rod travel less than

full-load trav.mm: 12.10
Speed 1/min : 750...755

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...160.0
1000H.: (136.0...164.0)

Remarks:

APPLICATION :
Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DEE 7,6 L
 Edition : 14.10.87
 Superceeded : 7.86
 Calibrating oil : ISO-4113
 Combination no. : 0 402 076 026
 Injection pump
 Pump designation : PES6P110A72ORS305
 Governor
 Governor design. : RSV400...1050P2/399D
 R

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6466 A

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 050

Inlet press., bar : 1.5

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6,00x1,50x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar : 2,8...2,9
 Date of mfg. : (2,75...2

Prestroke mm : 2,80...2,90
 : (2,75...2,95)

Contr.-rod trav.mm: 9,00...12,00
 Cam sequence : 1-5-3-6-2-4

SD ang. spacing°CS: 0-60-120-180-240-300
 Tolerance + - : 0,5(0,75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 1050

Contr.-rod trav.mm: 11,7

Del.quantity cm3/ : 16,0...16,2

Dispersion cm3/ : 0,40

2nd speed 1/min: 400

Contr.-rod trav. m: 6,0

Del.quantity cm3/ : 1,3...1,9

Dispersion cm3/ : 0,20

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Cont.-rod travelmm: 0,3...1,0

Governor-spring reload

Notch setting x : -

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1050

Del.quantity cm3/ : 160,0...162,0

1000H.: (-)

Dispersion cm3/ : 4.0

1000H.: (-)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 40...48

Testing:

1st c-rod trav.mm : 10,7

Speed 1/min : 1085...1100

2nd c-rod trav.mm : 5,1

Speed 1/min : 1155

LOWEST RATED SPEED I

Control-lever

position degrees: 17...25

Setting point w/out aux. spring

Speed 1/min : 400

Contr.-rod trav.mm: 5,5

Testing:

Speed 1/min : 100

C-rod trav.mm min : 19,0
Speed 1/min : 400
C-rod trav.mm : 6,0

Speed 1/min : 400
Del.quantity cm3/ : 13,0...19,0
1000H.: (-)

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1050
C-rod trav.mm : 11.90
2nd speed 1/min : 650
C-rod trav.mm : 12.15...12.45

Remarks:

:
Start-of-delivery mark is at 15°
angular displacement of the cam after
start of delivery at cylinder 1 with
control-rod travel 9.00...12.00 mm

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 170

Measurement

Speed 1/min : 500

1st pressure hPa : 710

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 650
Del.quantity cm3/ : 170.0...173.0
1000H.: (-)

Speed 1/min : 500
Del.quantity cm3/ : 89.0...95.0
1000H.: (-)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10,7
Speed 1/min : 1085...1100

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140,0...180,0

HIGH IDLE

1st version

Speed 1/min : 1155
Contr.-rod trav,mm: 5.10
Del.quantity cm3/ : 32.5...37.5

LOW IDLE

M10

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,7 E 1
Edition : 09.10.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 402 076 724
Injection pump
Pump designation : PES6P110A82OLS3131-1
EP type number : 0 412 016 717
Governor
Governor design. : RSV350...750POA536
Governor no. : 0 421 833 279

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM427

1st version kW : 129,0
Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.30...4.40
 : (4.25...4.45)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 6- 2- 4- 1- 5- 3

SD ang. spacing⁰CS: 0-60-120-180-240-300
Tolerance + -⁰ : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.20...12.30

Del.quantity cm3/ : 13.5...13.7

100H.: (13.2...13.9)

Dispersion cm3/ : 0.4

100H.: (0.8)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.9...7.1

Del.quantity cm3/ : 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/ : 0.4

100H.: (0.7)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...0.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 135.0...137.0

1000H.: (132.5...139.5)

Dispersion cm3/ : 4.00

1000H.: (8.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 24...32

Testing:

1st c-rod trav.mm : 11.20

Speed 1/min: 750...755

2nd c-rod trav.mm : 4.00

Speed 1/min: 775...788

LOWEST RATED SPEED I

Control-lever
position degrees: 13...21
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 7.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.50
Speed 1/min : 350
C-rod trav.mm : 6.90...7.10
C-rod trav.mm : 2.00
Speed 1/min : 360...400

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.20
Speed 1/min : 740...750

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 130.0...150.0
1000H.: (126.0...154.0)

Remarks:

:

Observe VDT-I-420/120

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21,9 J
 Edition : 18.09.87
 Superceeded : 26.6.87
 Calibrating oil : ISO-4113

Combination no. : 0 402 640 809

Injection pump
 Pump designation : PE12P120A32OLS7813
 EP type number : 0 412 620 809
 Governor
 Governor design. : RQV350...10SOPA870
 Govenor no. : 0 421 813 640

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 444 LA

1st version kW : 552.0
 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 150...170

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Contr.-rod trav.mm: 19.00...21.00
 Cam sequence : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7

SD ang. spacing°CS: 0-45-60-105-120-165-
 180-225-240-285-300-
 345

Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 12

BASIC SETTING

1st speed 1/mi: 650

Contr.-rod trav.mm: 14.30...14.50

Del.quantity cm3/ : 22.4...22.6

100H.: (22.1...22.9)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 350.0

Contr.-rod trav. in: 5.2...5.4

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/ : 0.8

100H.: (1.2)

(B) Setting of injection pump with
 externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 350
 Sleeve travel mm: 1.90...2.10

2nd speed 1/min: 700
 Sleeve travel mm: 4.10...4.50

3rd speed 1/min: 1100
 Sleeve travel mm: 7.60...8.00

4th speed 1/min: 1200
 Sleeve travel mm: 9.50...9.90

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1150

Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 650
Charge press. hPa : 850
Del. quantity cm³/ : 224.0...226.0
1000H.: (221.0...229.0)
Dispersion cm³/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 64...72

Testing:
1st c-rod trav.mm : 14.50
Speed 1/min : 1090...1100
2nd c-rod trav.mm : 4.00
Speed 1/min : 1190...1220
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 14...22

Testing:
Speed 1/min : 100
C-rod trav.mm min : 7.70
Speed 1/min : 350
C-rod trav.mm : 5.20...5.40

CONSTANT REGULATION

Speed 1/min : 350...600

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1050
C-rod trav.mm : 15.30...15.50
2nd speed 1/min : 1000
C-rod trav.mm : 15.60...15.80
3rd speed 1/min : 950
C-rod trav.mm : 15.80...16.00

Adjustment test, manifold-pressure
compensator (LDA, ADA, ALDA)

1st version
Setting
Speed 1/min : 600
Pressure hPa : 850
Contr.-rod trav.mm: 14.30...14.50

Measurement
Speed 1/min : 600

1st pressure hPa : 350
C-rod trav.mm : 10.80...11.00
2nd pressure hPa : 600

C-rod trav.mm : 13.40...13.60
3rd pressure hPa : 1200
C-rod trav.mm : 14.60...14.80
4th pressure hPa : 1400
C-rod trav.mm : 15.20...15.40

SWITCH-OVER POINT

Speed 1/min : 270 (290)

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa : 1700
Speed 1/min : 1050
Del. quantity cm³/ : 256.0...259.0
1000H.: (253.0...262.0)
Dispersion cm³/ : 8.00
1000H.: (12.0)
Charge press. hPa : 1700
Speed 1/min : 900
Del. quantity cm³/ : 270.0...274.0
1000H.: (267.0...277.0)
Dispersion cm³/ : 8.00
1000H.: (12.0)
Charge press. hPa : 1700
Speed 1/min : 1050
Del. quantity cm³/ : 185.0...188.0 *
1000H.: (182.0...191.0)
Dispersion cm³/ : 8.00
1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm³/ : 139.0...141.0
1000H.: (136.0...144.0)
Dispersion cm³/ : 8.00
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 14.50
Speed 1/min : 1090...1100

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 260.0...280.0
1000H.: (256.0...284.0)

Remarks:

* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11,0 T
Edition : 09.10.87
Superceeded : 14.8.87
Calibrating oil : ISO-4113

Combination no. : 0 402 646 838

Injection pump
Pump designation : PE6P120A320LS7808
EP type number : 0 412 626 816
Governor
Governor design. : RQ300/1050PA762-4
Governor no. : 0 421 801 390

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM441 LA

1st version kW : 240,0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27
Prestroke mm : 5.30...5.40
 : (5.25...5.45)
Contr.-rod trav.mm: 20.00...21.00
Cam sequence : 6- 3- 5- 2- 4- 1

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 6

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 13.90...14.10

Del.quantity cm3/ : 21.1...21.3

 100H.: (20.8...21.6)

Dispersion cm3/ : 0.5

 100H.: (0.9)

2nd speed 1/min: 300.0
Contr.-rod trav, m: 5.7...6.0
Del.quantity cm3/ : 1.6...2.2
 100H.: (1.3...2.5)
Dispersion cm3/ : 0.6
 100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 2.10...2.30
2nd speed 1/min: 600
Sleeve travel mm: 5.90...6.10
3rd speed 1/min: 875
Sleeve travel mm: 6.20...6.30
4th speed 1/min: 1100
Sleeve travel mm: 6.60...6.80
5th speed 1/min: 1150
Sleeve travel mm: 9.30...9.70

SLEEVE POSITION

Control-lever position
Degree: -2
Speed 1/min: 600
Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

M17

Speed 1/min: 600
Charge press. hPa : 900
Del.quantity cm3/ : 211.0...213.0
 1000H.: (208.0...216.0)
Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Setting point:
Speed 1/min : 600
Contr.-rod trav.mm: 20.0

Testing:
1st c-rod trav.mm : 13.80
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1170...1200
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring
Speed 1/min : 300
Contr.-rod trav.mm: 5.8

Testing:
Speed 1/min : 200
C-rod trav.mm min : 7.70
Speed 1/min : 300
C-rod trav.mm : 5.70...6.00
C-rod trav.mm : 2.00
Speed 1/min : 370...410

TORQUE CONTROL

Dimension a mm : 0.30
2nd speed 1/min : 1050
C-rod trav.mm : 14.80...15.00
3rd speed 1/min : 800
C-rod trav.mm : 15.10...15.30

Adjustment test, manifold-pressure
compensator (LDA, ADA, ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 900
Contr.-rod trav.mm: 13.90...14.10

Measurement
Speed 1/min : 600

1st pressure hPa : 300
C-rod trav.mm : 10.70...10.90
2nd pressure hPa : 550
C-rod trav.mm : 12.70...12.90

3rd pressure hPa : 1050
C-rod trav.mm : 14.00...14.10
4th pressure hPa : 1150
C-rod trav.mm : 14.40...14.60

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1350
Speed 1/min : 1050
Del.quantity cm3/ : 236.0...239.0
1000H.: (233.0...242.0)

Dispersion cm3/ : 8.00
1000H.: (12.0)

Charge press. hPa : 1350
Speed 1/min : 800
Del.quantity cm3/ : 242.0...246.0
1000H.: (239.0...249.0)

Dispersion cm3/ : 8.00
1000H.: (12.0)

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 135.0...137.0
1000H.: (132.0...140.0)

Dispersion cm3/ : 8.00
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 13.80
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 190.0...210.0
1000H.: (186.0...214.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 A 1
Edition : 18.09.87
Superceeded : 5.11.86
Calibrating oil : ISO-4113
Combination no. : 0 402 648 812
Injection pump
Pump designation : PE8P12DA320LS7801
EP type number : 0 412 628 806
Governor
Governor design. : RQ300/1050PA717
Governor no. : 0 421 801 258

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442 LA

1st version kW : 320,0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1,50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6,00x1,50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 20.00...21.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 14.80...15.00

Del.quantity cm³/ : 21.6...21.8

100H.: (21.3...22.1)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.1...6.7

Del.quantity cm³/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm³/ : 0.6

100H.: (1.0)

SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 600

Charge press. hPa : 680

Del.quantity cm³/ : 216.0...218.0

1000H.: (213.0...221.0)

Dispersion cm³/ : 5.00

1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Setting point:

Speed 1/min : 600

M20

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 14.40

Speed 1/min : 1095...1110

2nd c-rod trav.mm : 4.00

Speed 1/min : 1160...1190

4th speed 1/min : 1300

C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 6.4

Testing:

Speed 1/min : 200

C-rod trav.mm min : 8.00

Speed 1/min : 300

C-rod trav.mm : 6.10...6.70

C-rod trav.mm : 2.00

Speed 1/min : 380...420

TORQUE CONTROL

Dimension a mm : 0.35

2nd speed 1/min : 1050

C-rod trav.mm : 15.40...15.70

3rd speed 1/min : 850

C-rod trav.mm : 16.00...16.20

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : 680

Contr.-rod trav.mm: 14.80...15.00

Measurement

Speed 1/min : 600

1st pressure hPa : 310

C-rod trav.mm : 12.20...12.40

2nd pressure hPa : 470

C-rod trav.mm : 13.80...14.00

3rd pressure hPa : 820

C-rod trav.mm : 15.00...15.10

4th pressure hPa : 1100

C-rod trav.mm : 16.00...16.10

5th pressure hPa : -

C-rod trav.mm : 11.60...11.70

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1150
Speed 1/min : 1050
Del. quantity cm³/ : 229.0...232.0
1000H.: (226.0...235.0)
Dispersion cm³/ : 8.00
1000H.: (12.0)
Charge press. hPa : 1150
Speed 1/min : 850
Del. quantity cm³/ : 247.0...251.0
1000H.: (244.0...254.0)
Dispersion cm³/ : 8.00
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav,mm: 14.40
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 200.0...220.0
1000H.: (196.0...224.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 14,2 D2
Edition : 09.10.87
Superceeded : 26.8.87
Calibrating oil : ISO-4113

Combination no. : 0 402 648 815

Injection pump
Pump designation : PE8P120A920/4LS7008X
EP type number : 0 412 628 812
Governor
Governor design. : RQV200...950PA547-6
Governor no. : 0 421 813 499

Customer-spec. information
Customer : SAAB-SCANIA

Engine : DSC14 02

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.50...4.60
: (4.45...4.65)

Contr.-rod trav.mm: 6.00...8.00

Cam sequence : 1- 2- 7- 3- 4- 5-
6- 8

SD ang. spacing^oCS: 0-45-90-135-180-225-
270-315

Tolerance + - ^o : 0.50 (0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 7.00...12.80

& c-rod trav max. : 21.00

Difference ^o CS : 1.05...1.75

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 12.80...12.90

Del.quantity cm³/ : 18.3...18.5

100H.: (18.0...18.8)

Dispersion cm³/ : 0.7

100H.: (1.0)

2nd speed 1/min: 225.0

Contr.-rod trav. m: 4.7...4.9

Del.quantity cm³/ : 1.4...1.8

100H.: (-)

Dispersion cm³/ : 0.3

100H.: (0.6)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 225

Sleeve travel mm: 1.30...1.40

2nd speed 1/min: 260

Sleeve travel mm: 1.70...1.90

3rd speed 1/min: 360

Sleeve travel mm: 2.60...3.00

4th speed 1/min: 1000

Sleeve travel mm: 7.90...9.00

5th speed 1/min: 1110

Sleeve travel mm: 9.30...9.50

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1040

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

M23

1st version

Speed 1/min: 700

Charge press. hPa : 900

Del.quantity cm³/ : 183.0...185.0

1000H.: (180.0...188.0)

Dispersion cm³/ : 7.00

1000H.: (10.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 55...63

Testing:

1st c-rod trav.mm : 11.80

Speed 1/min : 990...1000

2nd c-rod trav.mm : 4.00

Speed 1/min : 1090...1120

4th speed 1/min : 1250

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 6...14

Testing:

Speed 1/min : 100

C-rod trav.mm min : 6.20

Speed 1/min : 225

C-rod trav.mm : 4.70...4.90

C-rod trav.mm : 2.00

Speed 1/min : 330...390

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 500

Pressure hPa : 900

Contr.-rod trav.mm: 12.80...12.90

Measurement

Speed 1/min : 500

1st pressure hPa : -

C-rod trav.mm : 11.00...11.10

3rd pressure hPa : 215

C-rod trav.mm : 11.60...11.80

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 900

Speed 1/min : 950

Del. quantity cm³/ : 177.0...185.0
1000H.: (175.0...187.0)
Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm³/ : 146.0...150.0
1000H.: (144.0...152.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 11.80
Speed 1/min : 990...1000

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 240.0...290.0
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225
Contr.-rod trav.mm: 4.70...4.90
Del. quantity cm³/ : 14.0...18.0
Dispersion cm³/ : 3.00
1000H.: (6.00)

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb, with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

M24

Scania test specifications taken over
on May 3, 1985
Start of delivery - engine: 22° before
TDC at control-rod travel = 6.0...
8.0 mm
Engine firing sequence: 1-5-4-2-6-3-7-8

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 B
Edition : 18.09.87
Superceeded : 14.11.87
Calibrating oil : ISO-4113

Combination no. : 0 402 648 824

Injection pump
Pump designation : PE8P120A32OLS7801
EP type number : 0 412 628 806
Governor
Governor design. : RQV300..10SOPA797
Governor no. : 0 421 813 532

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442 LA

1st version kW : 320.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
Contr.-rod trav.mm: 20.00...21.00
Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 14.80...15.00

Del.quantity cm³/ : 21.6...21.8

100H.: (21.3...22.1)

Dispersion cm³/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 6.2...6.6
Del.quantity cm³/ : 1.6...2.2
100H.: (1.3...2.5)
Dispersion cm³/ : 0.6
100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 1.20...1.40
2nd speed 1/min: 600
Sleeve travel mm: 4.90...5.10
3rd speed 1/min: 1075
Sleeve travel mm: 7.40...7.60
4th speed 1/min: 1100
Sleeve travel mm: 8.00...8.20
5th speed 1/min: 1150
Sleeve travel mm: 9.00...9.20

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1090
Contr.-rod travelmm: 16.50...18.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 600
Charge press. hPa : 680
Del. quantity cm³/ : 216.0...218.0
1000H.: (213.0...221.0)
Dispersion cm³/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 50...58

Testing:
1st c-rod trav.mm : 14.40
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
Speed 1/min : 1160...1190
4th speed 1/min : 1300
C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
position degrees: 15...23

Testing:
Speed 1/min : 100
C-rod trav.mm min : 7.90
Speed 1/min : 300
C-rod trav.mm : 6.20...6.40

CONSTANT REGULATION

Speed 1/min : 300...500

TORQUE CONTROL

Dimension a mm : 0.40
2nd speed 1/min : 1050
C-rod trav.mm : 15.40...15.70
3rd speed 1/min : 850
C-rod trav.mm : 16.00...16.20

Adjustment test, manifold-pressure
compensator (LDA, ADA, ALDA)

1st version

Setting
Speed 1/min : 600
Pressure hPa : 680
Contr.-rod trav.mm: 14.80...15.00

Measurement

Speed 1/min : 600
1st pressure hPa : 310
C-rod trav.mm : 12.20...12.40
2nd pressure hPa : 470
C-rod trav.mm : 13.80...14.00

3rd pressure hPa : 820
C-rod trav.mm : 15.00...15.10
4th pressure hPa : 1100
C-rod trav.mm : 16.00...16.10
5th pressure hPa : 150
C-rod trav.mm : 11.50...11.70

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1150
Speed 1/min : 1050
Del. quantity cm³/ : 229.0...232.0
1000H.: (226.0...235.0)
Dispersion cm³/ : 8.00
1000H.: (12.0)
Charge press. hPa : 1150
Speed 1/min : 850
Del. quantity cm³/ : 247.0...251.0
1000H.: (244.0...254.0)
Dispersion cm³/ : 8.00
1000H.: (12.0)
Charge press. hPa : -

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than
full-load trav.mm: 14.40
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 200.0...220.0
1000H.: (196.0...224.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 B 1
Edition : 09.10.87
Superceeded : 12.9.86
Calibrating oil : ISO-4113

Combination no. : 0 402 648 825

Injection pump
Pump designation : PE8P120A32OLS7801
EP type number : 0 412 628 806
Governor
Governor design. : RQV300..1050PA797-3
Governor no. : 0 421 813 627

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442 A

1st version kW : 260.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
 : (5.15...5.35)
 Contr.-rod trav.mm: 20.00...21.00
 Cam sequence : 8- 7- 2- 6- 3- 5-
 4- 1

SD ang. spacing^oCS: 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 13.90...14.00

Del.quantity cm3/ : 19.6...19.8

100H.: (19.3...20.1)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.2...6.6

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/ : 0.6

100H.: (1.0)

(B) Setting of injection pump with externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300

Sleeve travel mm: 1.20...1.40

2nd speed 1/min: 600

Sleeve travel mm: 4.90...5.10

3rd speed 1/min: 1075

Sleeve travel mm: 7.40...7.60

4th speed 1/min: 1100

Sleeve travel mm: 8.00...8.20

5th speed 1/min: 1150

Sleeve travel mm: 9.00...9.20

SLEEVE POSITION

Control-lever position

Degree: -1

Speed 1/min: 1090

Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

M28

1st version

Speed 1/min: 600
 Charge press. hPa : 650
 Del.quantity cm3/ : 196.0...198.0
 1000H.: (193.0...201.0)
 Dispersion cm3/ : 5.00
 1000H.: (9.00)

HIGHEST RATED SPEED**1st version**

Control-lever
 position degrees: 49...57

Testing:

1st c-rod trav.mm : 11.80
 Speed 1/min : 1090...1100
 2nd c-rod trav.mm : 4.00
 Speed 1/min : 1155...1185
 4th speed 1/min : 1300
 C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Control-lever
 position degrees: 15...23

Testing:

Speed 1/min : 100
 C-rod trav.mm min : 7.70
 Speed 1/min : 300
 C-rod trav.mm : 6.20...6.40

CONSTANT REGULATION

Speed 1/min : 300...450

TORQUE CONTROL

Dimension a mm : 1.40
 2nd speed 1/min : 1050
 C-rod trav.mm : 12.60...12.80
 3rd speed 1/min : 850
 C-rod trav.mm : 13.70...13.90
 4th speed 1/min : 700
 C-rod trav.mm : 14.20...14.40

Adjustment test, manifold-pressure compensator (LDA, ADA, ALDA)

1st version

Setting
 Speed 1/min : 600
 Pressure hPa : 650
 Contr.-rod trav.mm: 13.80...14.00

Measurement

Speed 1/min : 600

1st pressure hPa : 300
 C-rod trav.mm : 12.10...12.30

2nd pressure hPa : 400
C-rod trav.mm : 13.10...13.40
3rd pressure hPa : 850
C-rod trav.mm : 13.90...14.00

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1050
Speed 1/min : 1050
Del. quantity cm3/ : 175.0...179.0
1000H.: (172.0...182.0)
Dispersion cm3/ : 8.00
1000H.: (12.0)

Charge press. hPa : 1050
Speed 1/min : 700
Del. quantity cm3/ : 209.0...213.0
1000H.: (206.0...216.0)
Dispersion cm3/ : 8.00
1000H.: (12.0)

Charge press. hPa : 1050
Speed 1/min : 850
Del. quantity cm3/ : 203.0...207.0
1000H.: (200.0...210.0)
Dispersion cm3/ : 8.00
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 11.80
Speed 1/min : 1090...1100

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm3/ : 175.0...190.0
1000H.: (171.0...194.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 F
Edition : 18.09.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 0 402 648 832

Injection pump
Pump designation : PE8P120A320LS7810
EP type number : 0 412 628 819
Governor
Governor design. : RQ300/1050PA858
Governor no. : 0 421 801 398

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442 LA

1st version kW : 368.0
Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Calibrating nozzle-holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Perforated-plate
diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
: (5.15...5.35)
Contr.-rod trav.mm: 19.50...21.00
Cam sequence : 8- 7- 2- 6- 3- 5-
4- 1

SD ang. spacing°CS: 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 8

BASIC SETTING

1st speed 1/mi: 600

Contr.-rod trav.mm: 14.30...14.50

Del.quantity cm3/ : 23.9...24.1

100H.: (23.6...24.4)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 300.0

Contr.-rod trav, m: 6.2...6.6

Del.quantity cm3/ : 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/ : 0.6

100H.: (1.0)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 300
Sleeve travel mm: 2.90...3.10

2nd speed 1/min: 600
Sleeve travel mm: 5.90...6.10

3rd speed 1/min: 950
Sleeve travel mm: 6.20...6.40

4th speed 1/min: 1110
Sleeve travel mm: 6.50...7.00

5th speed 1/min: 1160
Sleeve travel mm: 9.50...10.00

SLEEVE POSITION

Control-lever position

Degree: -2

Speed 1/min: 600

Contr.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

NO3

1st version

Speed 1/min: 600
Charge press. hPa : 900
Del.quantity cm3/ : 239.0...241.0
1000H.: (236.0...244.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version

Setting point:

Speed 1/min : 600

Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 14.10

Speed 1/min : 1095...1110

2nd c-rod trav.mm : 4.00

Speed 1/min : 1145...1175

4th speed 1/min : 1300

C-rod trav,mm : 0.00...1.50

LOWEST RATED SPEED I

Setting point w/out aux. spring

Speed 1/min : 300

Contr.-rod trav.mm: 5.9

Testing:

Speed 1/min : 200

C-rod trav.mm min : 8.00

Speed 1/min : 300

C-rod trav.mm : 5.80...6.10

C-rod trav.mm : 2.00

Speed 1/min : 370...410

TORQUE CONTROL

Dimension a mm : 0.35

2nd speed 1/min : 1050

C-rod trav.mm : 15.10...15.30

3rd speed 1/min : 800

C-rod trav.mm : 13.30...15.50

Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)

1st version

Setting

Speed 1/min : 600

Pressure hPa : 900

Contr.-rod trav.mm: 14.30...14.50

Measurement

Speed 1/min : 600

1st pressure hPa : 320

C-rod trav.mm : 9.90...10.10

2nd pressure hPa : 620
C-rod trav.mm : 13.00...13.20
3rd pressure hPa : 1100
C-rod trav.mm : 14.40...14.50

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 1500
Speed 1/min : 1050
Del.quantity cm3/ : 257.0...260.0
1000H.: (254.0...263.0)

Dispersion cm3/ : 8.00
1000H.: (12.0)

Charge press. hPa : 1500
Speed 1/min : 800
Del.quantity cm3/ : 265.0...269.0
1000H.: (262.0...272.0)

Dispersion cm3/ : 8.00
1000H.: (12.0)

Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 133.0...135.0
1000H.: (130.0...138.0)

Dispersion cm3/ : 8.00
1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 14.10
Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 220.0...240.0
1000H.: (216.0...244.0)

Remarks:

:

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30
: (5.15...5.35)
Contr.-rod trav.mm: 19.00...21.00
Cam sequence : 12- 1- 5- 9- 8- 3-
4- 11- 10- 2- 6- 7

SD ang. spacing^oCS: 0-45-60-105-120-165-
180-225-240-285-300-
345
Tolerance + - ^o : 0.50 (0.75)

SD mark cyl. no. : 12

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 15.90...16.00

Del.quantity cm3/ : 26.7...26.9

100H.: (26.4...27.2)

Dispersion cm3/ : 0.5

100H.: (0.9)

2nd speed 1/min: 350.0
Contr.-rod trav. m: 5.1...5.3
Del.quantity cm3/ : 1.4...2.0
100H.: (1.1...2.3)
Dispersion cm3/ : 0.8
100H.: (1.2)

SLEEVE POSITION

Control-lever position
Degree: -3
Speed 1/min: 800
Cont.-rod travelmm: 0.30...1.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 700
Del.quantity cm3/ : 267.0...269.0
1000H.: (264.0...272.0)
Dispersion cm3/ : 5.00
1000H.: (9.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 23...31

NO6

Testing:

1st c-rod trav.mm : 14.90
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 775...788
4th speed 1/min : 900
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 9...17
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 5.2
Speed 1/min : 350
C-rod trav.mm : 5.10...5.30

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 13.10
Speed 1/min : 750...755

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 240.0...260.0
1000H.: (236.0...264.0)

Remarks:

:

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 14,2 E
 Edition : 18.09.87
 Superceeded : 10.84
 Calibrating oil : ISO-4113
 Combination no. : 0 402 678 801
 Injection pump
 Pump designation : PE8P120A92D/4LS7002-
 1
 EP type number : 0 412 628 805
 Governor
 Governor design. : RSV350...1050P1/504
 Governor no. : 0 421 833 147

Customer-spec. information
 Customer : SAAB-SCANIA

Engine : DS14 42

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Perforated-plate
 diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6,00X1,50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5,00...5,10
 : (4,95...5,15)

N07

Contr.-rod trav.mm: 9,00...12,00
 Cam sequence : 1- 2- 7- 3- 4- 5-
 6- 8

SD ang. spacing°CS: 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1st speed 1/mi: 700

Contr.-rod trav.mm: 13,20...13,30

Del.quantity cm3/ : 18,7...18,9

100H.: (18,4...19,2)

Dispersion cm3/ : 0,6

100H.: (0,9)

2nd speed 1/min: 350,0

Contr.-rod trav. m: 4,4...4,6

Del.quantity cm3/ : 1,0...1,4

100H.: (-)

Dispersion cm3/ : 0,3

100H.: (0,6)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0,30...1,00

Governor-spring reload

Notch setting x : 6,00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 700

Del.quantity cm3/ : 187,0...189,0

1000H.: (184,0...192,0)

Dispersion cm3/ : 6,00

1000H.: (9,00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 60...68

Testing:

1st c-rod trav.mm : 12,20

Speed 1/min : 1090...1100

2nd c-rod trav.mm : 4.00
Speed 1/min : 1160...1190
4th speed 1/min : 1300
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 27...35
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 4.0
Speed 1/min : 350
C-rod trav.mm : 4.40...4.60
C-rod trav.mm : 2.00
Speed 1/min : 440...500

FUEL-DELIVERY CHARACTERISTICS

1st version
Speed 1/min : 1000
Del. quantity cm³/ : 184.0...192.0
1000H.: (182.0...194.0)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 12.20
Speed 1/min : 1090...1100

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm³/ : 240.0...290.0
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 4.40...4.60
Del. quantity cm³/ : 10.0...14.0
Dispersion cm³/ : 3.00
1000H.: (6.00)

Remarks:

: CASE

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without ROB0 diaphragm

For comb. with letter index see
VDT-I-400/116.

Scania test specifications taken over
on 1983-10-05
Engine start of delivery: 18° BTDC

Engine firing sequence: 1-5-4-2-6-3-7-8

APPLICATION

Tractor (tractor engines)

Control-lever
position degrees: 18...24

LOWEST RATED SPEED I

Control-lever
position degrees: 18...24
Speed 1/min : 200
C-rod trav.mm : 10.80...14.20
C-rod trav.mm : 8.00
Speed 1/min : 300
Speed 1/min : 400
C-rod trav.mm max : 5.00
C-rod trav.mm : 0.01
Speed 1/min : 485...590

LOWEST RATED SPEED II

Control-lever
position degrees: 24...30
Setting point w/out aux. spring:
Speed 1/min : 375
Contr.-rod trav.mm: 8.00

Testing:

Speed 1/min : 200
Contr.-rod trav.mm: 14.3...17.2
Speed 1/min : 300
Contr.-rod trav.mm: 10.3...11.8
Speed 1/min : 500
Contr.-rod trav.mm: 1.9...3.7
Speed 1/min : 720
Contr.-rod trav.mm: 0.01

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 17.00
Speed 1/min : 1055...1075

Remarks:

;

Stamp prestroke dimension into pump housing
Stamp dimension "0", Control-rod travel "0" corresponds to 1.0 mm clearance of the control-collar capsule from the end-face stop plate.

Set idle stop at 300 min. -1 to a control-rod travel of 8.0 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MTU 37,4 C
Edition : 20.10.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 0 406 039 111
Injection pump
Pump designation : PE10ZWM160/12OZWA68R
EP type number : 0 416 069 001
Governor
Governor design. : RQU425/120OZWA68R
Governor no. : 0 422 407 036

Customer-spec. information
Customer : MTU

Engine : MB 838 KA

1st version kW : 100
Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 40...45
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder
assembly : 0 681 443 022

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 016

Outside diameter
x Wall thickness
x Length mm : 8,00x2,00x1500

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Prestroke mm : 2,50...2,60
 : (2,45...2,65)
Contr.-rod trav.mm: 12,00
Cam sequence : 10-3-4-5-6-7-8-1-2-9

N11

SD ang. spacing°CS: 0-27-72-99-144-171-
 216-243-288-315
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1000

Contr.-rod trav.mm: 15.00

Del.quantity cm3/ : 51.5...53.5

 100H.: (51.0...54.0)

Dispersion cm3/ : 1.5

 100H.: (2.2)

2nd speed 1/min: 1000
Contr.-rod trav. m: 9.00
Del.quantity cm3/ : 26.5...28.5
 100H.: (26.0...29.0)
Dispersion cm3/ : 1.5
 100H.: (2.2)
3rd speed 1/min: 300
Contr.-rod trav.mm: 9.00
Del.quantity cm3/ : 15.0...18.0
 100H.: (14.5...18.5)
Dispersion cm3/ : 2.0
 100H.: (3.0)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1200
Cont.-rod travelmm: 18.00...18.50

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1200
Del.quantity cm3/ : 505.0...515.0
 1000H.: (500.0...520.0)
Dispersion cm3/ : 15.0
 1000H.: (22.0)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 52...58

Testing:

1st c-rod trav.mm : 15.00
Speed 1/min : 1200
2nd c-rod trav.mm : 14.00
Speed 1/min : 1225...1240

3rd c-rod trav.mm : 4.00
Speed 1/min : 1312...1352
4th speed 1/min : 1339...1389
C-rod trav.mm : 0.01

APPLICATION
Special-purpose vehicle

LOWEST RATED SPEED I

Control-lever
position degrees: 20...26
Setting point w/out aux. spring
Speed 1/min : 425
Contr.-rod trav.mm: 6.80

Testing:

Speed 1/min : 200
C-rod trav.mm min : 18.00
Speed 1/min : 300
C-rod trav.mm : 12.60...16.60
C-rod trav.mm : 6.80
Speed 1/min : 425
Speed 1/min : 1275
C-rod trav.mm max : 0.01
C-rod trav.mm : 1.50
Speed 1/min : 600...1200

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 14.00
Speed 1/min : 1225...1240

HIGH IDLE

1st version
Contr.-rod trav.mm: 4.00
Dispersion cm³/ : 12.0
1000H.: (-)

LOW IDLE

Speed 1/min : 425
Contr.-rod trav.mm: 6.80
Del.quantity cm³/ : 104.0...111.0
1000H.: (-)
Dispersion cm³/ : 10.0
1000H.: (-)

Remarks:

Set idle stop at 425 min. -1 to a
control-rod travel of 6.8 mm.
Limit shutoff stop screw to 1.0 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MWM 5,9 H
Edition : 21.05.87
Superceeded : -
Calibrating oil : ISO-4113
Combination no. : 9 400 085 270
Injection pump
Pump designation : PES6A90D32ORS2718
EP type number : 9 400 084 003
Governor
Governor design. : RSV350...1400A2B2215
-1R
Governor no. : 9 420 083 231

Customer-spec. information
Customer : MWM

Engine : D229/6

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42
Overflow valve : 1 417 143 046

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80
: (2.65...2.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4

SD ang. spacing^oCS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

SD mark cyl. no. : 1

START OF DELIVERY DIFFERENCE

betw.c-rod trav.mm: 9.00...12.00
& c-rod tray max. : 21.00
Difference^o CS : 3.00...4.00

BASIC SETTING

1st speed 1/mi: 1400

Contr.-rod trav.mm: 8.50...8.60

Del.quantity cm3/ : 6.1...6.2

100H.: (5.9...6.4)

Dispersion cm3/ : 0.3

100H.: (0.5)

2nd speed 1/min: 350.0

Contr.-rod trav. m: 5.4...5.6

Del.quantity cm3/ : 1.1...1.5

100H.: (0.9...1.7)

Dispersion cm3/ : 0.2

100H.: (0.4)

SLEEVE POSITION

Control-lever position

Degree: -3

Speed 1/min: 800

Contr.-rod travelmm: 0.30...1.00

Governor-spring reload

Notch setting x : 5.00

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1400

Del.quantity cm3/ : 61.5...62.5

1000H.: (59.5...64.5)

Dispersion cm3/ : 3.00

1000H.: (5.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 55...63

Testing:

1st c-rod trav.mm : 7.50

Speed 1/min : 1440...1450
2nd c-rod trav.mm : 4.00
Speed 1/min : 1475...1505
3rd c-rod trav.mm : 4.00
4th speed 1/min : 1650
C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever
position degrees: 21...29
Setting point w/out aux. spring
Speed 1/min : 350
Contr.-rod trav.mm: 5.0

Testing:

Speed 1/min : 100
C-rod trav.mm min : 19.00
Speed 1/min : 350
C-rod trav.mm : 5.40...5.50
C-rod trav.mm : 2.00
Speed 1/min : 560...620

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1400
C-rod trav.mm : 8.50...8.60
2nd speed 1/min : 500
C-rod trav.mm : 9.10...9.20
4th speed 1/min : 900
C-rod trav.mm : 8.80...9.10

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 500
Del.quantity cm3/ : 56.0...58.0
1000H.: (53.5...60.5)
Speed 1/min : 900
Del.quantity cm3/ : 64.0...66.0
1000H.: (61.5...68.5)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 7.50
Speed 1/min : 1440...1450

MIDDLE RATED SPEED

Contr.-rod trav.mm: 4.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

Speed 1/min : 350
Contr.-rod trav.mm: 5.40...5.60
Del.quantity cm3/ : 11.0...15.0
1000H.: (9.0...17.0)
Dispersion cm3/ : 2.50
1000H.: (4.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 D
Edition : 24.07.87
Superceeded : -
Calibrating oil : ISO-4113

Combination no. : 9 400 085 289

Injection pump
Pump designation : PES4A90D410RS2729
EP type number : 9 400 084 009
Governor
Governor design. : RQV300...1300AB1228L
Governor no. : 9 420 080 231

Customer-spec. information
Customer : DAIMLER-BENZ-BRASIL.

Engine : OM364A/L911

TEST BENCH REQUIREMENTS

Calibrating-oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.00

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 3- 4- 2

SD ang. spacing^oCS: 0-90-180-270
Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed 1/mi: 1300

Contr.-rod trav.mm: 13.70...13.80

Del.quantity cm³/ : 8.4...8.5

100H.: (8.2...8.7)

Dispersion cm³/ : 0.3

100H.: (0.5)

2nd speed 1/min: 300.0
Contr.-rod trav. m: 8.9...9.1
Del.quantity cm³/ : 0.7...1.1
100H.: (0.5...1.3)
Dispersion cm³/ : 0.2
100H.: (0.4)

(B) Setting of injection pump with
externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1380
Sleeve travel mm: 8.50...8.60
2nd speed 1/min: 300
Sleeve travel mm: 0.70...1.30
3rd speed 1/min: 500
Sleeve travel mm: 2.20...2.60
4th speed 1/min: 900
Sleeve travel mm: 4.90...5.10

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1380
Contr.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1300
Charge press. hPa : 700
Del.quantity cm³/ : 84.5...85.5
1000H.: (82.5...87.5)
Dispersion cm³/ : 3.00
1000H.: (5.00)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 61...69

Testing:

1st c-rod trav.mm : 12.70
Speed 1/min : 1340...1350
2nd c-rod trav.mm : 4.00
Speed 1/min : 1475...1505
3rd c-rod trav.mm : 4.00
4th speed 1/min : 1600
C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever
position degrees: 18...26

Testing:

Speed 1/min : 100
C-rod trav.mm min : 10.20
Speed 1/min : 300
C-rod trav.mm : 8.60...8.80
C-rod trav.mm : 2.00
Speed 1/min : 570...630

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min : 1300
C-rod trav.mm : 13.70...13.80
2nd speed 1/min : 500
C-rod trav.mm : 15.20...15.30
3rd speed 1/min : 850
C-rod trav.mm : 14.80...15.00
4th speed 1/min : 1000
C-rod trav.mm : 14.30...14.60

Adjustment test, manifold-pressure
compensator (LDA, ADA, ALDA)

1st version

Setting
Speed 1/min : 500
Pressure hPa : 700
Contr.-rod trav.mm: 15.20...15.30

Measurement

Speed 1/min : 500
1st pressure hPa : -
C-rod trav.mm : 13.50...13.60
2nd pressure hPa : 570
C-rod trav.mm : 14.80...14.90
3rd pressure hPa : 500
C-rod trav.mm : 13.90...14.10

SWITCH-OVER POINT

Speed 1/min : 240 (260)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700
Speed 1/min : 500
Del. quantity cm3/ : 81.0...83.0
1000H.: (78.5...85.5)
Charge press. hPa : 700
Speed 1/min : 850
Del. quantity cm3/ : 88.0...90.0
1000H.: (84.5...92.5)
Charge press. hPa : -
Speed 1/min : 500
Del. quantity cm3/ : 64.0...66.0
1000H.: (61.5...68.5)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 12.70
Speed 1/min : 1340...1350

MIDDLE RATED SPEED
Contr.-rod trav.mm: 4.00

STARTING FUEL DELIVERY

Speed 1/min : 100
Del. quantity cm3/ : 78.0...88.0
1000H.: (75.0...91.0)
Contr.-rod trav.mm: 16.00...17.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 9.0 F 3
Edition : 14.10.87
Superceeded : 3.3.87
Calibrating oil : ISO-4113

Combination no. : 9 400 230 017

Injection pump
Pump designation : PES8A75D32OR2463
Governor
Governor design. : RQV300...1500AB1059
DR

Customer-spec. information
Customer : IHC

Engine : DV 550 C

TEST BENCH REQUIREMENTS

Calibrating-gil
inlet temp. °C : 38...42

Overflow valve : -

Inlet press., bar : 2.5

Calibrating nozzle-holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test inj. tubing : 9 681 230 702

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set constant delivery quant.
per values -----

START OF DELIVERY

Prestroke mm : 1.95...2.05*
: (1.90...2.00)

Contr.-rod trav.mm: 10.70

Prestroke mm : 3.95...4.05
: (3.90...4.10)**

Contr.-rod trav.mm: 10.70

Cam sequence : 1-8-7-3-6-5-4-2

SD ang. spacing^oCS: 0-45-90-135-180-225-
270-315
Tolerance + - ^o : 0.50(0.75)

BASIC SETTING

1st speed 1/mi: 1500

Contr.-rod trav.mm: 10.65...10.75

Del.quantity cm3/ : 6.8...6.9

100H.: (-)

Dispersion cm3/ : 0.2

100H.: (-)

2nd speed 1/min: 300
Contr.-rod trav. m: 6.00
Del.quantity cm3/ : 1.6...2.0**
100H.: (-)

SLEEVE POSITION

Control-lever position
Degree: -1
Speed 1/min: 1600
Contr.-rod travelmm: 15.00...18.50

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 1500
Del.quantity cm3/ : 68.0...69.0
1000H.: (64.5...70.5)

HIGHEST RATED SPEED

1st version
Control-lever
position degrees: 64...72

Testing:
1st c-rod trav.mm : 9.70
Speed 1/min : 1600...1610
2nd c-rod trav.mm : 9...14
Speed 1/min : 1700
3rd c-rod trav.mm : 3.00...9.50
Speed 1/min : 1800
4th speed 1/min : 2000
C-rod trav.mm : 0...0.10

LOWEST RATED SPEED I

Control-lever
position degrees: 6...14

Testing:
Speed 1/min : 200

C-rod trav.mm min : 8.20
Speed 1/min : 300
C-rod trav.mm : 5.40...7.30
C-rod trav.mm : 3.05
Speed 1/min : 450
Speed 1/min : 600
C-rod trav.mm max : 2.60
Speed 1/min : 870
C-rod trav.mm : 0.10

SWITCH-OVER POINT

Speed 1/min : 150...230

FUEL-DELIVERY CHARACTERISTICS

1st version
Speed 1/min : 300 *
Del.quantity cm3/ : 1.0...15.0 *
1000H.: (0...16.0)
Speed 1/min : 300**
Del.quantity cm3/ : 36.0...46.0**
1000H.: (-)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than
full-load trav.mm: 9.70
Speed 1/min : 1600...1610

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 112.0...135.0
1000H.: (-)

LOW IDLE

Speed 1/min : 300
Del.quantity cm3/ : 17.0...21.0
1000H.: (-)

Remarks:

* = Cylinders 1,7,6 and 4
** = Cylinders 2,8,3 and 5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 9.0 F 4
 Edition : 14.10.87
 Superceeded : 11.3.87
 Calibrating oil : ISO-4113
 Combination no. : 9 400 230 017
 Injection pump
 Pump designation : PES8A75D320R2463
 Governor
 Governor design. : RQV300...1500AB1060
 DR

Customer-spec. information
 Customer : IHC

Engine : DV 550 C

TEST BENCH REQUIREMENTS

Calibrating-oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 019

Inlet press., bar : 2.4

Calibrating nozzle-holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test inj. tubing : 9 681 230 702

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set constant delivery quant.
 per values -----

START OF DELIVERY

Prestroke mm : 1.95...2.05*
 : (1.90...2.00)
 Contr.-rod trav.mm: 10.70
 Prestroke mm : 3.95...4.05
 : (3.90...4.10)**
 Contr.-rod trav.mm: 10.70
 Cam sequence : 1-8-7-3-6-5-4-2

N20

SD ang. spacing⁰CS: 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50(0.75)

BASIC SETTING

1st speed 1/mi: 1500

 Contr.-rod trav.mm: 9.30...9.40

 Del.quantity cm³/ : 4.9...5.1

 100H.: (-)

 2nd speed 1/min: 300
 Contr.-rod trav. m: 6.00
 Del.quantity cm³/ : 1.7...2.1**
 100H.: (-)

SLEEVE POSITION

Control-lever position
 Degree: 65...71
 Speed 1/min: 1600
 Cont.-rod travelmm: 15.00...18.50

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
 Speed 1/min: 1500
 Del.quantity cm³/ : 49.0...51.0
 1000H.: (-)

HIGHEST RATED SPEED

1st version
 Control-lever
 position degrees: 64...72

Testing:
 1st c-rod trav.mm : 9...14
 Speed 1/min : 1700
 3rd c-rod trav.mm : 3.00...9.50
 Speed 1/min : 1800
 4th speed 1/min : 2000
 C-rod trav.mm : 0...0.10

LOWEST RATED SPEED I

Control-lever
 position degrees: 6...14

Testing:
 Speed 1/min : 200
 C-rod trav.mm min : 8.20
 Speed 1/min : 300
 C-rod trav.mm : 5.40...7.30
 C-rod trav.mm : 3.05
 Speed 1/min : 450
 Speed 1/min : 600

C-rod trav.mm max : 2.60
Speed 1/min : 870
C-rod trav.mm : 0.10

TORQUE CONTROL

Dimension a mm : -
Torque-control curve - 1st version
1st speed 1/min : 1500
C-rod trav.mm : 9.80...10.00
2nd speed 1/min : 1000
C-rod trav.mm : 9.80...10.00
3rd speed 1/min : 700
C-rod trav.mm : 9.80...10.00

SWITCH-OVER POINT

Speed 1/min : 150...230

FUEL-DELIVERY CHARACTERISTICS

1st version

Speed 1/min : 1000
Del.quantity cm3/ : 46.0...49.0
1000H.: (-)

Speed 1/min : 300
Del.quantity cm3/ : 1.0...15.0*
1000H.: (-)

Speed 1/min : 300
Del.quantity cm3/ : 36.0...46.0**
1000H.: (-)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 8.35
Speed 1/min : 1605...1615

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 112.0...135.0
1000H.: (-)

LOW IDLE

Speed 1/min : 300
Del.quantity cm3/ : 17.0...21.0
1000H.: (-)

Remarks:

* = Cylinders 1,7,6 and 4
** = Cylinders 2,8,3 and 5

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : BMW 2,4 F
Compl. date: : 742
Edition : 26.08.87
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 6/10F2300 R206
Type number : 0 460 406 047

Customer-specific information
Customer : BMW

Engine : M21D24W

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 022

Opening
pressure bar : 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6
x Wall thickness : 2
x Length mm : 450

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500
Charge press. hPa: 500
Setting value mm: 4,1...4,5
KSB solenoid-operated
valve volt: -

Supply-pump pressure:

Speed 1/min: 1500
Charge press. hPa: 500
Setting value bar: 5,9...6,5
KSB solenoid-operated
valve volt: -

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del. quantity cm3/
1000H.: 26,0...27,0
KSB solenoid-operated
valve volt: -
Dispersion cm3/: 3,0
1000H.: -

Low-idle speed regulation:

Speed 1/min: 400
Charge press. hPa: 500
Del. quantity cm3/
1000H.: 6,0...10,0
KSB solenoid-operated
valve volt: -
Dispersion cm3/: 3,0
1000H.: -

Full-load speed regulation:

Speed 1/min: 2500
Charge press. hPa: 500
Del. quantity cm3/
1000H.: 11,5...17,5
KSB solenoid-operated
valve volt: -
Dispersion cm3/: 5,0
1000H.: -

Start:

Speed 1/min: 100
Charge press. hPa: -
Del. quantity : 44,0...46,0
mind cm3/1000H.: -
KSB solenoid-operated
valve volt: -
Dispersion cm3/: -
1000H.: 12,0

Inspection-pump test specifications
Test specifications in parentheses

1st speed 1/min: 500
Charge press. hPa: 500
TD travel mm: 3,0...4,0
mm: (2,8...4,2)

KSB solenoid-operated
valve volt: 12,0

2nd speed 1/min: 1000
Charge press. hPa: 500
TD travel mm: 4,5...5,5
mm: (4,3...5,7)

KSB solenoid-operated
valve volt: 12,0

3rd speed 1/min: 750
Charge press. hPa: 500
TD travel mm: 0,8...1,6
mm: (0,5...1,9)

KSB solenoid-operated
valve volt: -
4th speed 1/min: 1500
Charge press. hPa: 500
TD travel mm: -
mm: (3,6...5,0)

KSB solenoid-operated
valve volt: -
5th speed 1/min: 2000
Charge press. hPa: 500
TD travel mm: 6,1...6,9
mm: (5,8...7,2)

KSB solenoid-operated
valve volt: -

Supply-pump pressure characteristic:

1st speed 1/min: 500
Charge press. hPa: 500
Supply-pump pressure bar: 3,1...3,7
KSB solenoid-operated
valve volt: -

2nd speed 1/min: 2000
Charge press. hPa: 500
Supply-pump pressure bar: 7,2...7,9
KSB solenoid-operated
valve volt: -

Overflow quantity at overflow valve:

1st speed 1/min: 500
Charge press. hPa: 500
KSB solenoid-operated
valve volt: -
Overflow quantity cm3/10s: 41...83
(26...98)

2nd speed 1/min: 2300
Charge press. hPa: 500
KSB solenoid-operated
valve volt: -
Overflow quantity cm3/10s: 55...138
(40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1250
Charge-air pressure-setting point hPa: 120
ADA stroke mm: 5,0
KSB solenoid-operated
valve volt: -
Del. quantity cm3/ 21,7...25,3
1000H.: (21,2...25,8)
2nd speed 1/min: 2650

Charge press. hPa: 500
KSB solenoid-operated
valve volt: -
Del. quantity cm3/ 0...6,0
1000H.: -

3rd speed 1/min: 2500
Charge press. hPa: 500
KSB solenoid-operated
valve volt: -
Del. quantity cm3/ 11,5...17,5
1000H.: (10,5...18,5)

4th speed 1/min: 2300
Charge press. hPa: 500
KSB solenoid-operated
valve volt: -
Del. quantity cm3/ 26,0...29,0
1000H.: (25,2...29,8)

5th speed 1/min: 1750
Charge press. hPa: 500
KSB solenoid-operated
valve volt: -
Del. quantity cm3/ 28,7...32,3
1000H.: (28,2...32,8)

6th speed 1/min: 1250
Charge press. hPa: -100
KSB solenoid-operated
valve volt: -
Del. quantity cm3/ 20,5...22,5
1000H.: (19,2...23,8)

7th speed 1/min: 1250
Charge press. hPa: 120
KSB solenoid-operated
valve volt: -
Del. quantity cm3/ 21,7...25,3
1000H.: (21,2...25,8)

8th speed 1/min: 1250
Charge press. hPa: 500
KSB solenoid-operated
valve volt: -
Del. quantity cm3/ -
1000H.: (24,2...28,8)

9th speed 1/min: 500
Charge press. hPa: 500
KSB solenoid-operated
valve volt: -
Del. quantity cm3/ 23,0...26,0
1000H.: (21,5...27,5)

Zero delivery (stop):

Electr. shutoff:

Speed 1/min: 400
ELAB volt: -
Del. quantity cm3/ -
max. 1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 400
KSB solenoid-operated
valve volt: -
Del. quantity cm³/: -
1000H.: (4,0...12,0)
2nd speed 1/min: 450
KSB solenoid-operated
valve volt: -
Del. quantity cm³/: -
1000H.: 0...6,0

Automatic starting fuel delivery:

1st speed 1/min: 200
Charge press. hPa: -
KSB solenoid-operated
valve volt: -
Del. quantity cm³/: 42,0...52,0
ind. 1000H: -

3rd speed 1/min: 400
Charge press. hPa: -
KSB solenoid-operated
valve volt: -
Del. quantity cm³/: 22,0...32,0
1000H: -

4th speed 1/mi: 480
Charge press. hPa : -
KSB solenoid-operated
valve Volt: -
Del. quantity cm³/: 17,7...22,3
1000: -

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation		
K	mm	: 3,2...3,4
KF	mm	: 6,4...6,6
MS	mm	: 1,4...1,6
SVS max.	mm	: 3,9
XK	mm	: 17,0...19,0
XL	mm	: 9,6...13,0

Remarks:

:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 4,1 B
Edition : 14.10.87
replaces : 04.86
Calibrating oil : ISO 4113

Injection pump : VE 6/10F1800 L218-3
Type number : 0 460 416 053

Customer-specific information
Customer : VOLVO-PENTA

Engine : TD

Power k: 91

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly : 1 688 901 022

Opening
pressure bar : 130...133

Test inj. tubing : 1 688 750 073

Outside diameter : 6
x Wall thickness : 2
x Length mm : 450

Start of delivery
Prestroke mm : 0,3
(from BDC): +-0.02 (0.04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1200
Charge press. hPa: 1000
Setting value mm: 4,8...5,2

Supply-pump pressure:

Speed 1/min: 1200
Charge press. hPa: 1000

N25

Setting value bar: 6,3...6,9

Full-load del. with charge press.:

Speed 1/min: 1000
Charge press. hPa: 1000
Del. quantity cm³/
1000H.: 76,5...77,5
Dispersion cm³/
1000H.: 3,5

Full-load del. w/cut charge press.:

Speed 1/min : 750
Del. quantity cm³/
1000H.: 57,5...58,5

Low-idle speed regulation:

Speed 1/min: 400
Del. quantity cm³/
1000H.: 12,0...16,0
Dispersion cm³/
1000H.: 3,5

Full-load speed regulation:

Speed 1/min: 2000
Charge press. hPa: 1000
Del. quantity cm³/
1000H.: 15,0...21,0

Start:

Speed 1/min: 100
Del. quantity : -
mind cm³/1000H.: 90,0

Inspection-pump test specifications
Test specifications in parentheses

1st speed 1/min: 750
Charge press. hPa: 1000
TD travel mm: 1,1...1,9
mm: (0,3...2,7)

2nd speed 1/min: 1200
Charge press. hPa: 1000
TD travel mm: 4,8...5,2
mm: (4,0...6,0)

3rd speed 1/min: 1500
Charge press. hPa: 1000
TD travel mm: 6,2...6,8
mm: (5,3...7,7)

4th speed 1/min: 1800
Charge press. hPa: 1000
TD travel mm: 6,2...7,0
mm: (5,4...7,8)

Supply-pump pressure characteristic:

1st speed 1/min: 750
Charge press. hPa: 1000
Supply-pump pressure bar: 5,2...5,8
2nd speed 1/min: 1200
Charge press. hPa: 1000
Supply-pump pressure bar: 6,3...6,9
3rd speed 1/min: 1500
Charge press. hPa: 1000
Supply-pump pressure bar: 7,0...7,6
4th speed 1/min: 1800
Charge press. hPa: 1000
Supply-pump pressure bar: 7,7...8,3

Overflow quantity at overflow valve:

1st speed 1/min: 750
Charge press. hPa: -
Overflow quantity cm³/10s: 41...83
(26...98)
2nd speed 1/min: 1800
Charge press. hPa: 1000
Overflow quantity cm³/10s: 55...138
(40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 750
Charge-air pressure-setting point hPa: 300
LDA stroke mm: 6,2
Del. quantity cm³/1000H.: 63,5...64,5
(61,0...67,0)
2nd speed 1/min: 2050
Charge press. hPa: 1000
Del. quantity cm³/1000H.: 0,0...6,0
3rd speed 1/min: 2000
Charge press. hPa: 1000
Del. quantity cm³/1000H.: 15,0...21,0
(14,0...22,0)
4th speed 1/min: 1950
Charge press. hPa: 1000
Del. quantity cm³/1000H.: 37,0...45,0
(36,0...46,0)
5th speed 1/min: 1800
Charge press. hPa: 1000
Del. quantity cm³/1000H.: 72,0...76,0
(70,0...78,0)
6th speed 1/min: 1500
Charge press. hPa: 1000
Del. quantity cm³/1000H.: 74,0...78,0
(73,0...79,0)
7th speed 1/min: 1000
Charge press. hPa: 1000

Del. quantity cm³/1000H.: 76,5...77,5
(74,7...79,3)
8th speed 1/min: 750
Charge press. hPa: 1000
Del. quantity cm³/1000H.: 70,5...73,5
(69,0...75,0)
9th speed 1/min: 750
Charge press. hPa: -
Del. quantity cm³/1000H.: 57,5...58,5
(55,7...60,3)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: 1800
Del. quantity cm³/1000H.: 0...3

Electr. shutoff:

Speed 1/min: 400
ELAB volt: -
Del. quantity cm³/1000H.: 0,0...3,0
max. 1000H.: -

Idle delivery:

Mfg. date: until : -
1st speed 1/min: 400
Del. quantity cm³/1000H.: 12,0...16,0
(9,0...19,0)
2nd speed 1/min: 450
Del. quantity cm³/1000H.: 3,0...9,0
(1,5...10,5)
3rd speed 1/min: 500
Del. quantity cm³/1000H.: 0,0...3,0

Automatic starting fuel delivery:

1st speed 1/min: 400
Del. quantity cm³/ind. 1000H.: 62,0
2nd speed 1/min: 550
Del. quantity cm³/ax. 1000H.: 70,0

Shutoff electromagnet:

Cut-in min. voltage : 18,0
Rated voltage : 24,0

Mounting and assembly dimensions:

Designation
K mm : -
KF mm : 5,2...5,5

MS	mm	: 0,9...1,1
SVS max.	mm	: 5,5
XK	mm	: 18,8...20,8
XL	mm	: 12,4...15,8

Remarks:

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